THE LITERARY GAZETTE

Mournal of the Belles Lettres, Science, and Art.

Nº 1995.

LONDON, SATURDAY, APRIL 14, 1855.

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44t, West Strand, April. GEO. GODWIN. 187-

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Season will take place, by permission of Ree Majesty's Commissitings for the Great Exhibition of 1851, in the OROUNDS of
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LONDON, SATURDAY, APRIL 14, 1855.

REVIEWS.

Life of Thomas Young, M.D., F.R.S. By George Peacock, D.D., F.R.S., Dean of Ely. Murray.

Works of Thomas Young, M.D., F.R.S. Edited by George Peacock, D.D., and John Leitch. Murray.

THE name of Dr. Thomas Young has not yet obtained the place in the history of science to which it is entitled. Foreigners have been somewhat less unjust in this matter than his own countrymen. Forty years ago, Hum-boldt said that "there was no field of human knowledge which Dr. Young had not cultivated with success; wherever he had passed, his path was marked by discoveries." His election as one of the eight foreign associates of the National Institute is the best evidence of the estimation in which he was held in France. Yet even on the Continent there have been attempts to detract from his fame. The discovery of the key to hieroglyphic writing has been claimed for Champollion, who entered upon that field several years after Young's Egyptian researches had been made public. Champollion's countrymen have, with some honourable exceptions, allowed their national feeling to blind their fair judgment on this subject. Even Arago has treated the discovery of the hieroglyphical alphabet as a national question, asserting for Champollion the priority, as he has also done for Papin in the case of the invention of the steam-engine. Bunsen's advocacy of Champollion's claim is easily accounted for, as he evidently is acquainted with Dr. Young's early writings only through the controversial statements of his opponents; and he frankly admits that he was influenced much by personal feeling, "having the happiness of knowing M. Champollion, and of learning from him the first rudiments of hieroglyphic lore at the foot of the obelisks of Rome. injustice on this point is more to be regretted; "and the regret," remarks the biographer, "is deepened by the fact that Arago was the first to recognise the importance of Dr. Young's optical discoveries, after they had been received in this country with persevering hos-tility, embittered by personal feeling, in one quarter, and with a neglect on the part of scientific men generally, which contrasted very unfavourably with their ready acceptance and appreciation by some of the most distinguished philosophers of France." The republication of Dr. Young's works, and this memoir by Dean Peacock, clear in statement and masterly in style, will secure tardy justice to the memory of a philosopher whose claims will not henceforth be disputed to two of the greatest achievements of modern science— the establishment of the undulatory theory of light, and the interpretation of the hiero-

glyphics of Egypt.

It so rarely happens that the merits of a great discoverer can be long or generally overlooked, that the story of Dr. Young's treatment by men of science deserves to be more closely examined. So far as he is personally concerned, there is no difficulty in giving satisfactory explanations both of the neglect and opposition of which he had throughout his life an unusual share. The "persevering hostility, embittered by personal feeling, in one quarter," refers to Brougham's attacks on Young in the 'Edinburgh Review':

"Unjust and intemperate as these criticisms were, and utterly erroneous as were the views which they attempted to support, they were expressed generally in language so choice and felicitous as could hardly fail to charm an ignorant or indifferent reader. We find them intermixed also with passages which are remarkable for the correct and comprehensive view which they express of the proper mode of conducting philosophical inquiries, and quite worthy of those varied powers, the application of which, during a long and eventful life, will make the name of the great man to whom they have been commonly attributed, for ever memorable in the civil, the political, and the literary history of this country. The effect which these powerful and repeated attacks produced upon the estimate of Dr. Young's scientific character was remarkable. The poison sank deep into the public mind, and found no antidote in reclamations of other journals of co-ordinate influence and authority. We consequently find that the subject of Dr. Young's researches remained absolutely unnoticed by men of science for many years."

The origin of Brougham's hostility was a notice by Dr. Young of a memoir in the 'Philosophical Transactions' for 1798, in which the young author was somewhat contemptuously spoken of, as—

"A young gentleman of Edinburgh, 'a man who certainly promises, in the course of time, to add considerably to our knowledge of the works of nature,' who, in a memoir printed in the 'Philosophical Transactions' for 1798, had proposed one problem as new, which was familiar to the mathematicians of the seventeenth century; and had put forward a solution of another problem as superior to that which was given by Newton, but which only differed from it by being less simple, and by erroneously giving the name of cycloid to a curve, which was, though closely allied to it, in reality the companion of the trochoid.

"The author of this paper, which contains several porismatic propositions which are curious and original, was Mr. Brougham, then a very young man, whose enterprising genius seemed to have prepared him to grapple with every branch of human knowledge; and though the particular criticism referred to was just, it was somewhat flippant and ungracious, and was probably not without its influence in provoking the severe retaliatory treatment which Young's own Memoirs shortly afterwards experienced at the hands of one who, though not himself invulnerable, was armed at all points, and always prepared to come to close quarters with his enemies."

Brougham never forgave Young, and took every opportunity of attacking his scientific character. In the second number of the 'Edinburgh Review' are two articles on Young's optical discoveries. A reply to the reviewer appeared in the form of a pamphlet, of which it is stated that one copy only was sold, and no private means were used for making it generally known, so that it produced no effect in correcting the impressions made on the public mind by the attacks of the reviewer. "It was reserved," adds the biographer, "for Arago and Fresnel to become, at a much later period, the expositors and interpreters of these Memoirs, and to rescue them from the neglect which they had so long and so unhappily experienced from his own countrymen." It is only fair to state, however, that the obscurity of Dr. Young's early optical papers suffices to account for much of this neglect:—

"Like all Young's early scientific writings, they were extremely obscure. The system also which he followed in this and other cases of superseding the usual forms of demonstration, whether geometrical or symbolical, by the use of ordinary language, and not unfrequently by suppressing such demonstrations altogether, imposed upon his readers a burden which few of them were able, and still fewer willing, to bear.

readers a burden which level of states were also, and still fewer willing, to bear.

"The correct conception also of undulations and their interferences, when not aided by the use of formulæ by which their conditions are very clearly and concisely expressible, is so difficult, that in default of such formulæ they could hardly have conveyed more than a very indistinct impression of their entire purport to the mind of the best instructed of his contemporaries. It was only by making Dr. Young's experiments the subject of special research, expanding his demonstrations when given, and replacing them when merely hinted at or omitted, that the entire correctness and coherence of his views could be fully recognised.

"The reverence also attached in this country to whatever was sanctioned by the authority of Newton, operated not a little to retard the adoption of any methods of investigation which he had not used, or the acceptance of any conclusion or theory which he had not might be the configuration."

which he had repudiated.

"At the period of which we are now speaking, we had continued to retain, in this country, the notation of fluxions, in preference to that which was founded upon the much more expressive notation of Leibnitz, for fear of compromising the claim of his rival to the priority of its discovery; and we were thus, to a great extent, insulated, as it were, from the writings of the great mathematicians of the Continent, who were greatly in advance

It was Dean Peacock who first introduced the notation of the differential calculus into the mathematical examinations in the Senate House at Cambridge, the effect of which he may well pronounce to have been the production in a few years of a total revolution in the whole course of mathematical study. The biographer mentions, as another instance of scientific hero worship, that so great was Laplace's aversion to the Huygenian theory of light, only because it had been opposed by Newton, that it was with the utmost diffi-culty that the powerful advocacy of Arago could secure from the Institute not favour, but justice to the labours of Fresnel. However, all this feeling has now passed away, and the importance of Dr. Young's optical discoveries are admitted by scientific authorities of every country. "The discovery of the principle of optical interferences," says Sir John Herschel, "which has proved the key to all the more abstruse and puzzling properties of light, would alone have sufficed to place its author in the highest rank of scientific immortality, even were his other almost innumerable claims to such a dis-tinction disregarded."

The claims of Dr. Young to priority of discovery in the interpretation of hieroglyphic writing are still vehemently disputed, but the present work leaves no reasonable ground for doubt on the subject. Referring to his article on Egypt, published in the supplement to the 'Encyclopædia Britannica' in 1819, and now reprinted in the third volume of Dr. Young's collected works, Dean Peacock says:

"The reader who refers to Section VIII. of the article Egypt will find that in these observations and discoveries—the important bearing of which upon the progress of Egyptian learning M. Bunsen has in no respect exaggerated—both Champollion and Lepsius had been long before completely anticipated by Dr. Young. It was Young, as we have already seen, who first instituted the systematic comparison of these funeral rolls, and showed that the various sections into which they were divided in various manuscripts—however different in their age or in their style of writing—related more or less to the same scenes represented by the vignettes which headed them, and embraced more

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or less of the same texts, whether prayers, invoca-tions, or confessions. It was Young who con-nected the greatest part of those rolls which he examined, with the great hieroglyphical papyrus of Paris, as the most comprehensive of all those which had come under his observation, and who first came to the important conclusion that they formed a portion of those sacred books ascribed to Hermes Thoth, of which Diodorus and Clemens of Alexandria speak, which had been transmitted without alteration, from the earliest ages. It was Young also who first applied the epithet Mortuary Ritual to the complete series of those sacred formulæ, a designation which Champollion afterwards adopted, as was usual with him, without acknowledgment, though no part of the work of Dr. Young in which it was mentioned could possibly have been at that time unknown to him. This identification of texts, in papyri of ages so distant from each other, was undoubtedly the most interesting, if it was not the most important, of all the discoveries in Egyptian literature, which preceded the determinaof the phonetic alphabet.

"It was Dr. Young who first determined, and by no easy process, that the rings on the Rosetta stone contained the name of Ptolemy; it was Dr. Young who determined that the semicircle and oval, found at the end of the second ring in connexion with the former, was expressive of the feminine gender; and it was Dr. Young who had not only first suggested that the characters in the ring of Ptolemy were phonetic, but had determined, with one very unimportant inaccuracy, the values of four of those which were common to the name of Cleopatra which was required to be analyzed. All the principles involved in the discovery of an alphabet of phonetic hieroglyphics were not only distinctly laid down, but fully exemplified by him, and it only required the farther identification of one or two royal names with the rings which expressed them in hieroglyphics to extend the alphabet already known sufficiently to bring even names, which were not already identified, under

The third volume of Dr. Young's works is chiefly occupied with his hieroglyphical essays and correspondence, with introduction and notes by Mr. Leitch. Niebuhr and Bunsen have both pronounced that the discovery of the hieroglyphic alphabet was the greatest event in the literary history of the age. It is of no small moment to Dr. Young's fame, that every doubt as to his claim to this honour should be removed. The following brief statement of dates and facts may satisfy every candid mind, and cause some surprise how a conflicting claim has ever received support. Dr. Young commenced his Egyptian researches in 1814; published before the close of that year his conjectural translation of the Rosetta Inscription; discovered in 1815 that there were symbolic signs in the enchorial character; demonstrated in 1816 that the cursive characters of the sacred papyri were derived from the hieroglyphics; and in 1818 discovered the hieroglyphic alphabet. In 1819 he wrote the article Egypt for the fourth volume of the Supplement to the 'Encyclo-pædia Britannica.' This article obtained impædia Britannica. This article obtained immediate celebrity throughout Europe, and the 'Edinburgh Review' declared it was 'the greatest effort of scholarship and ingenuity of which modern literature can boast :

"The plates (says Mr. Leitch) by which it was accompanied, containing upwards of 200 names or words which he had deciphered in the hieroglyphic and enchorial inscriptions on the Rosetta Stone and in the Egyptian manuscripts, were also en-graved in the summer of 1818, and, having been favoured by the proprietors with a few separate copies of these, he distributed them among his friends, both on the continent and in England, with a cover on which was printed the title, 'Hiero-glyphical Vocabulary.' At the present day, how-

ever, the article EGYPT, being buried in an old edition of an Encyclopædia, is almost inaccessible, especially to continental scholars; and consequently ampollion, who pursued a wholesale system of plagiarism in regard to Dr. Young's discoveries, enjoys the credit abroad of having deciphered many hieroglyphical characters, symbolic as well as phonetic, the interpretation of which was first published by Dr. Young in this treatise. Schwarze, 'Das Alte Ægypten,' p. 445.) regard to the article generally it must be admitted that portions of it have been rendered obsolete by more recent additions to our knowledge of Egyptian literature and antiquities; but at the same time it should be borne in mind that these very discoveries were based upon the views here enunciated by Dr. Young.

Dr. Bunsen, in his work on 'Egypt's Place Universal History,' says, that "on the in Universal History,' says, that "on the publication of Champollion's Alphabet in 1822, Young made a vain attempt to appropriate the discovery to himself." Dr. Young did not claim Champollion's Alphabet, but he affirmed that he had shown years before the value of several of its characters, and given the clue to the discovery of the whole system of interpretation. The rivalry, as we have already mentioned, became a national affair, and Champollion's countrymen, Arago and Baron de Sacy, supported his claims, though in a less violent manner than his friend Bunsen. Mr. Leitch gives the following impartial decision of the celebrated German orientalist, Klaproth, from the 'Examen Critique des Travaux de feu M. Champollion :'-

"Depuis dix ans on parle avec enthousiasme de la découverte de l'alphabet phonétique faite par fau M. Champollion, mais peu de personnes paraissent avoir une idée bien nette, soit de ce qu'elle est réellement, soit des résultats qu'elle a pu produire. Le Docteur Young, en Angleterre, est sans contredit le premier auteur de cette découverte. Ce fut en 1818 qu'il reconnut la valeur alphabétique de la plupart des signes hiéroglyphiques qui com-posent les noms de Ptolémée et de Bérénice, parmi lesquels il a bien exactement déterminé le suivans, qui correspondent avec les résultats obtenus par M. Champollion.

"Après un exposé pareil, on peut être bien con-vaincu qu'en 1821 M. Champollion ne croyait pas à l'existence de signes alphabétiques parmi les hiéroglyphes, quoique le Docteur Young ent déjà communiqué sa découverte aux savans de l'Europ par un mémoire imprimé en 1818, et qui fut publié l'année suivante, dans le Supplément de l'Encyclo-pédie Britannique."

pédie Britannique."

The Chevalier de Paravey, a countryman of Champollion, says "that Dr. Young was the first who showed that the hieroglyphic characters have, in many cases, an alphabetic value, and thus furnished M. Champollion with a key, without which the latter could never have arrived at the important and curious results which he has since obtained;" and adds, that to dispute the priority of Dr. Young's discovery would be as absurd as to say, that the inventor of gunpowder was not he who mixed nitre, sulphur, and charcoal, but the man who first applied the mixture to the impulsion of projectiles. Mr. Salt, also a high Egyptian authority, says :-

"'The first idea,' says Salt, whom Champollion, on another occasion, commends for his candour towards himself, 'of certain hieroglyphics being intended to represent sounds, was suggested by Dr. Young, who from the names of Ptolemy and Berenice had pointed out nine which have since proved to be correct. Working upon this basis, Monsieur Champollion with happy success made out four or five others, as also about thirty synonymes, and by the ingenious application of these, he has been able to turn to effect the discovery,

and to decipher therewith a great number of the names of the Ptolemies and the Roman emperors, together with their titles, which fortunately gives us the means of determining the dates of most of the temples built within the period of their rule. M. Champollion seems to be unwilling to allow this, but the fact is evident; and surely he has accomplished too much to stand in need of assuming to himself the merit of another.

We have dwelt at considerable length on the two great subjects with which Dr. Young's

reputation is chiefly associated.

"If we refer to his other scientific works, embracing so wide a range of subjects, and some of them—more especially his essays on the tides and the cohesion of fluids—so remarkable for the bold-ness and originality of their treatment, we shall find that they were rarely read and never appre-ciated by his contemporaries, and even now are neither sufficiently known nor adequately valued: whilst if justice was awarded more promptly and in more liberal measure by his own countryn his hieroglyphical labours, these also were singularly unfortunate, as far as concerned the general diffusion of his fame, by coming into collision with adverse claims which were most unfairly and unscrupulously urged in his own age, and not much less so by some distinguished writers in very recent The great variety also of his titles to commemoration as a classical scholar and archæologist. a medical writer, an optician, a mathematician, or a physical philosopher, increases the difficulty of judging his relative rank amongst men of cel brity, whether they were his contemporaries or not: for the position which he might not venture to claim in virtue of his contributions to any single department of human knowledge, might be readily conceded to him when his combined labours were taken into consideration."

We transcribe also the epitaph written for the memorial tablet in Westminster, by his friend Mr. Hudson Gurney, which is free from the exaggerated panegyric common in

such inscriptions :-

"Sacred to the Memory of THOMAS YOUNG, M.D., Fellow and Foreign Secretary of the Royal Society, Member of the National Institute of France; a man alike eminent in almost every department of human learning. Patient of unin-termitted labour, endowed with the faculty of intuitive perception, who, bringing an equal mastery to the most abstruse investigations of letters and of science, first established the undulatory theory of light, and first penetrated the obscurity which had veiled for ages the hieroglyphics of Egypt. Endeared to his friends by his domestic virtues, honoured by the world for his unrivalled acquire ments, he died in the hopes of the resurrect the just. Born at Milverton, in Somersetshire, June 13th, 1773, died in Park-square, London, May 10th, 1829, in the 56th year of his age."

From Dean Peacock's interesting Memoir we give a few brief miscellaneous notes and anecdotes. Young belonged to a Quaker family, but his education was directed by his uncle, Dr. Brocklesby—the Dr. Brocklesby who offered Dr. Johnson an annuity to enable him to resort to a warmer climate; and who presented Edmund Burke with a thousand pounds, when such a gift was of importance to him. To his nephew he left, at his death, his house and furniture, his library and paintings, with about 10,000l. in money. Dr. Brocklesby had early introduced Young to the most distinguished circles in London, both in social position and intellectual eminence. His own merits as a scholar and man of science led to intimacy and correspondence with illustrious men at home and abroad; and the materials of the Memoir have been largely found in the letters addressed to him by Arago, Fresnel, Humboldt, Brewster, Brinkley, George Ellis, Gifford, Kater, Schu4

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nee ath; int-Dr. g to don, emiman ondoad; oeen maker, Bessel, Gell, and Macvey Napier, the editor of the 'Edinburgh Review' and of the 'Encyclopædia Britannica.' By the advice of his uncle, Young entered the medical profession. He studied at Edinburgh, Göttingen, and Cambridge. He never met with financial success as a practitioner, though he devoted himself for nearly twenty years to assiduous efforts to attain a position, which inferior men often reach by happy chances, unworthy contrivances, or powerful patronage. When he published his Introduction to 'Medical Literature,' containing a concise view of all the usual branches of medical study, Berzelius, the great Swedish chemist, wrote to him, expressing his admiration of the skill and completeness of the work:—

""Tell me,' he proceeds, 'how is it possible for the same person to possess so deep and comprehensive a knowledge of two sciences so widely different as Natural Philosophy and Medicine, with its subordinate sciences of Anatomy and Physiology? When I reflect that Chemistry constitutes my only pursuit, and that nevertheless I am daily learning how much has been done in that science that has escaped my inquiry, I marvel how you can have had time enough to go over all that you must have required to read in order to produce your Lectures on Natural Philosophy and this Medical Work."

In his early student-days at Edinburgh, Young possessed fame as an elegant and accomplished classical scholar. He selected the extracts from the Greek epigrammatists in the 'Analecta' of Professor Dalzell, who has left on record, in a note to the second volume of that work, a most honourable acknowledgment of the valuable assistance thus given. With Porson he had afterwards much intercourse and correspondence, and Dr. Parr also early recognised his classical acquirements. Of the first time he met with Parr, a notice is given by a college contemporary:—

"I remember his meeting Dr. Parr in the college Combination-room, and when the Doctor had made, as was not unusual with him, some dogmatical observation on a point of scholarship, Young said firmly, 'Bentley, sir, was of a different opinion;' immediately quoting his authority, and showing his intimate knowledge of the subject. Parr said nothing; but, when Dr. Young retired, asked who he was,' and though he did not seem to have heard his name before, he said, 'A smart young man that.'

"He had a great talent for Greek verse; and, on one occasion, I remember a young lady had written on the walls of the summer-house in the garden the following lines:—

'Where are those hours on airy pinions borne That brought to every guiltless wish success? When pleasure gladdened each succeeding morn, And every evining closed with dreams of peace?

"On the next morning appeared a translation in Greek Elegiacs, written under them, in Young's beautiful characters. It may be here mentioned, that when his mode of writing Greek was laid before Porson, he said, that if he had seen it before he would have adopted it."

Canning was greatly delighted with some of Young's Greek translations, which were first shown to him by George Ellis; and Burke, whose whole character was formed on that of Cicero, congratulated him on the elegance of his Latinity. At Göttingen he pursued his studies with much zeal, but he was better known there for his feats of horse-manship, and excellence in other athletic sports, than for his learning. The peculiarities of the Society of Friends he had long thrown aside, and, as is usual in such cases, he sometimes carried to noticeable lengths

his conformity with the frivolities of fashionable life. While yet a professed Quaker, Dr. Darwin once said of him, that "he united the scholar with the philosopher, and the cultivation of modern arts with the simplicity of ancient manners." In domestic life he was exemplary and beloved, and his moral and religious character were highly spoken of by those who knew him. Mr. Gurney thus writes of him:—

"To sum up the whole with that which passes all acquirement, Dr. Young was a man in all the relations of life, upright, kind-hearted, blameless. His domestic virtues were as exemplary as his talents were great. He was entirely free from either envy or jealousy, and the assistance which he gave to others engaged in the same lines of research with himself, was constant and unbounded. His morality through life had been pure, though unostentatious. His religious sentiments were by himself stated to be liberal, though orthodox. He had extensively studied the Scriptures, of which the precepts were deeply impressed upon his mind from his earliest years; and he evidenced the faith which he professed, in an unbending course of usefulness and rectitude."

We ought to have mentioned that during the long period when he was struggling to obtain a position as a physician in London, he refrained from publishing his name in connexion with any of his literary or scientific writings, being assured that this would have interfered with his professional prospects. This may partly account for the neglect which some of his discoveries and researches met with. Of his connexion with the 'Quarterly Review,' the following account is given in the Memoir:—

"Young was intimately associated with the leading contributors to the "Quarterly Review." The principal of these—after Mr. Gifford the Editor—was George Ellis, of Sunning Hill, a writer of great wit and vivacity—the author, not merely of some of the best literary articles which the Review contained, but also many others on the political questions of the day, in which he was sometimes assisted by Mr. Canning and Mr. Huskisson, with whose views he was thoroughly identified. He was a man of ardent affections, who felt for his friends almost as much as for himself; and he had resented, almost as a personal injury, the treatment which Young had received from the 'Edinburgh Review,' and was thus disposed, as much from personal as from party feeling, not merely to oppose the political and literary dictation of that powerful Journal, but also to watch with deep interest the rising fortunes of its rival, in the establishment of which he had taken so considerable a part.

"The same number of the Review which was headed by the Herculanensia was closed by Southey's spirit-stiring 'Life of Nelson;' and these being followed up, in subsequent volumes, by contributions of great interest and ability from Barrow, Walter Scott, Robert Grant, and others, were the means of rapidly extending its popularity and influence. 'It is a consolation to know,' says Ellis in writing to Young, 'that Brougham, who took advantage of the growing circulation of the 'Edinburgh Review' to desseminate his vile abuse of you, and Jeffrey who permitted him to do so, should be condemned to hear your praises on all sides, and to feel that the publication in which they are engaged is suffering and is likely to suffer

"Young, at different times, contributed eighteen articles to the 'Quarterly Review.' The subjects of nine of them were scientific; of five, medical; and of the rest, languages and criticism. Several of those of the first class, and all those of the last, comprehended original researches of no ordinary value, and either have been or will be noticed in the course of this volume: but those relating to medicine, which have been elsewhere

referred to, though by no means without merit, were for the most part too exclusively professional to be generally popular, and the exclusion of one of them, on Yellow Fever, from the Review, though it had been accepted and printed, was the occasion, when taken in conjunction with his other engagements, of abandoning his connexion with it altogether.

"He was much consulted by Mr. Gifford upon many articles submitted to him, more especially such as came within the very comprehensive sphere of his studies; and we find in the letters which passed between them, amongst many other secrets of authorship, the usual complaints of the trials to which editors of such journals are exposed. Some articles were too long and required pruning; the dulness of others was to be adapted by a higher seasoning to the public taste; many were forced upon the editor by the official or literary rank of their authors, which he dared not either reject or retouch; most of them required to be assimilated to the literary or political views which the 'Review' was designed to promote; whilst the last and not the least of his difficulties were the interests of the publisher, which, though never illiberally urged, could not be safely or reasonably neglected, though they might be found to be at variance with the favourite prepossessions both of editors, authors, and readers.

The republication of a selection of Dr. Young's miscellaneous works has been made, by the suggestion of his widow, and of his oldest friend, Mr. Hudson Gurney, who rightly deemed that it would prove a memorial worthy of his philosophical character. The Memoir by Dean Peacock is extremely interesting as a biography, while it gives lucid and condensed information on the various subjects with which Dr. Young's name is associated. Mr. Leitch has ably fulfilled his share of the work, in editing the hieroglyphic papers and correspondence.

Worlds beyond the Earth. By Montagu Lyon Phillips. Bentley. This treatise on the plurality of worlds we

consider more ingenious than philosophical. Not satisfied with the guarded arguments of Brewster, Lardner, and other scientific men, Mr. Phillips affirms that "there are more worlds than man's world," and that "they are all the seats of animated life." When we examine the proofs adduced, they resolve themselves into the old pourquoi non? of Fontenelle. Is it not quite natural to conclude that as our inhabited earth goes round the sun, so the stars, which are supposed to be suns like ours, have also inhabited planets revolving round them?—Why not? This is the sum of the argument for the plurality of worlds, so far as it is founded on facts of which inductive science can take cognizance. Other arguments from moral and religious considerations no doubt come into play, but so far as philosophical inquiry is concerned. absolutely nothing can be adduced to afford reasonable ground for argument. We must here observe that the masterly essay on the Plurality of Worlds, ascribed to Professor Whewell, has never yet been met on philosophical grounds. An earnest and energetic protest was there made against the presumption of speculating on subjects without a sufficient basis of scientific proof. The oppo-nents of Professor Whewell have almost invariably misrepresented or misunderstood his position. They accuse him of denying the existence of other inhabited worlds, and of representing the earth as the sole seat of animated life. Professor Whewell does not deny the plurality of worlds. In his Dia-

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logue on the subject, published as a supplement to the essay, this is re-stated with the utmost plainness. The questions are asked, "Why should the planets and stars not be inhabited?—how can you pretend to limit the power of the Creator?—might he not make creatures fitted to live in the stars? To which Professor Whewell replies; "No doubt the Creator might make creatures fitted to live in the stars, or in the small planetoids, or in the clouds, or on meteoric stones; but we cannot believe that he has done this without further evidence." "But," it is said, "we have the evidence of analogy." To which the reply is, that the analogies are not such as to afford grounds of affirmation either way. There may be planets circling other suns, and these planets may be peopled by beings with physical organisms; "but do not insist," says the essayist, "upon all this as ascertained knowledge." Let there be some distinction between the results of scientific discovery and those of imaginative speculation. When science knows nothing, science ought to affirm nothing. Analogy is useful in its own field, but must not intrude into the province of observation. We consider the essay on the Plurality of Worlds not so much of importance as an astronomical discussion, as from its cautions and rebukes as to an unguarded theorising, and its expositions of some of the first principles of inductive science. It does not deny the existence of other inhabited worlds, nor object to astronomers amusing themselves with theories on the subject. But it says: "Do not make use of your conjectures as if they were ascertained facts, and do not, as some have done, call that which rests only on vague analogies and dubious speculations, 'the creed of the philosopher, and the hope of the Christian.'" This view of the subject Mr. Phillips has wholly disregarded, nor does he seem capable of appreciating it. So little are some of the principles of the 'Novum Organum' of Bacon studied and followed even by those who profess to cultivate the inductive sciences!

The question of the plurality of worlds we consider, then, to be beyond the pale of scientific investigation, and capable of being argued by men of science only on conjectural ground. Revelation indeed presents other arguments for consideration, and affords more plausible reasons for holding the opinion; but this does not affect the philosophical soundness of Professor Whewell's protest against the alleged competency of science to

solve the question.

Having said thus much as to the philosophy of Mr. Phillips' book, we have pleasure in bearing testimony to the ingenuity of some of his speculations, especially what he calls the annular theory of the formation of the planets. His notion is, with regard to the solar system, that the planets are parts of the original substance of the sun, whizzed off during the gradual process of contraction and cooling of the central nebulous mass. And as each planet has the same origin, and some of them, as Mars, Venus, Mercury, the Earth, were formed at no predigious distance of time from each other, one is quite as likely to be peopled as another. The same argument holds with regard to other planets of other suns. But let us omit the question of the habitability of the planets to notice the author's theory of their formation—viz., by the gradual condensation of nebulous rings thrown off from the solar centre:—

"As the Sun consisted originally, if not altogether now, of a mass of fluid rotating on an axis, it must have been hollow. The centrifugal force would compel the particles to fly off from the centre till attraction balanced it; therefore the Sun, so soon as it commenced its rotation, would have thrown itself into the form of a hollow globe, flattened at the poles. Had the motion of rotation been excessive, its substance would have been flung off into the shape of a hollow ring; perhaps this will be its ultimate state, should it not be prevented by previously soliditying into a hollow globe.

"As all the planets, like the Sun, rotate on their

"As all the planets, like the Sun, rotate on their axes, and as they were, no doubt, originally fluid, for the reasons before given, they must likewise be hollow globes, and not solid ones; indeed solidity would seem a useless waste of matter in such cases, as it would apparently be unattended by any advantage that can be conceived; but of this more

"If the planets were formed out of the body of the Sun, then, reasoning from all that we know of our Earth, substances of various densities must have entered into the composition of that central orb. Now even gases have not all the same density; neither have the vapours into which heat converts all substances. Chemical science has very clearly demonstrated that the ultimate atoms of different elementary bodies have different weights, probably within the same volume. The Sun, therefore, would have consisted of a collection of elastic fluids of different densities, and, if no chemical attraction were exerted, of elementary atoms of different densities, and these atoms probably of equal diameter. But such a fluid mass, consisting of atoms of different densities, when rotating must follow a law of centrifugal force, at the same time generated, which law is this—that the densest materials must fly to that portion of the surface whose diameter is greatest.

"Have any of our readers tried the following simple experiments? In a glass globe let there be introduced some coloured water and some quick-silver. Now, if the globe be made to rotate rapidly, the quicksilver will rise up, in opposition to gravity, and arrange itself at the equatorial surface; and the less dense water will arrange itself in two equal zones, on each side. If the velocity of rotation be not sufficient to cause the quicksilver to fly to the equator of the globe, it will yet disperse itself in scattered portions against the surface, simulating continents and islands in a sea of water. If there be introduced into the globe more quicksilver, the equatorial zone will increase in breadth; and, at last, when enough has been introduced, it will form a hollow globe of mercury, with the water rotating inside; indeed, before this, a portion of the water will be found to be rotating within the rine of quicksilver.

within the ring of quicksilver.

"If now several fluids, not acting chemically on each other, of different densities, be introduced into the globe, when the globe is made to rotate, we shall observe the fluids rotating in rings arranged in the order of their respective densities.

"Here then we have a plain experimental demonstration that when a fluid mass, consisting of mixed fluids of various densities, rotates, the densest fluids are thrown off at the equatorial surface, and the others next in order of density.

"The Sun, then, in its primary condition, existed as a rotating, hollow spheroid of mixed gaseous elements, or of mixed gases and vapours formed out of the various elementary chemical bodies constituting its then substance. So long as the heat retained sufficient power, we may conceive the whole as having a density nearly uniform; but, in the process of time, as it parted with heat by radiation, those vapours or gases which parted with it fastest would become sensibly denser than the rest: the centrifugal force would then cause them to fly towards the equatorial region of the Sun. Here they would form a vast zone. Thus we have a sufficient explanation to account for the formation of a first zone. The next gas or vapour, which condensed by cooling in order, would form another zone, which must have rotated either within the first, or as two zones parallel to the

first, one on each side of it. The outer surface of the Sun would thus, it appears, form several concentric rings circulating about its centre in the plane of its equator.

"If all the particles of a ring of vapours continued to condense without separating, they would at length constitute a solid or a liquid ring; except, perhaps, in the case where a body, like some substances, passes at once from the gaseous state to the solid without any intermediate liquid condition. "But the regularity which this formation requires

"But the regularity which this formation requires in all the parts of the rings, and in their cooling, would evidently make this phenomenon very rare. Thus, the Solar System presents but one example of it, that of the rings of Saturn; unless, indeed, the existence of a ring encircling Neptune may be considered as proved.

"Now, from what has been before explained, almost always each ring of vapours ought to be divided into several masses, which being moved with velocities which differ little from each other, would continue to revolve at the same distance about the Sun. These masses would assume a spheroidal form, with a rotatory motion in the direction of their revolution, because their inferior particles have a less real velocity than the superior: they have therefore constituted so many planets in a state of vapour. But if one of them was sufficiently powerful to unite successively by its attraction all the others about its centre, the ring of vapours would be changed into one sole spheroidal mass, circulating about the Sun, with a motion of rotation in the same direction with that of revolution. This last case has been the most comman. The Solar System, however, presents us with the first case in the numerous small planets, called Asteroids or Planetoids, which, thirty-three in number, revolve between Mars and Jupiter—at least, unless we suppose with Olbers that they originally formed one planet only, which was separated by an explosion into several fragments, and actuated by different velocities."

The most noticeable feature in the annular hypothesis of Mr. Phillips is that its results show close approximations to the facts of the solar system as otherwise ascertained by astronomers. Thus, the calculated distances from the sun, and the calculated masses of the planets, by this theory agree in a striking manner with the observed distances and masses. We give the results as calculated for the planet Uranus:—

"The Sun, continuing to contract within the orbit of Neptune, again flung off another ring of vapour, whose breadth was 2,748,000,000 miles, and its thickness 4059 miles. As the Sun's diameter, at that time, would have been 1,792,000,000 miles, such a ring would have been the 411415 part of the Sun's then diameter. A globe of two inches in diameter, surrounded by a ring, half as thick as the very thinnest gold-leaf, and three inches broad, would give a very good, popular idea of the comparative thickness of the ring, and its relative magnitude.

"The mass of the ring thrown off by the Sun would be 00003999; and this ring, consolidated into a globe, would be the second-born planet, Uranus, omitting for the present his moons. By comparing this mass with that assumed by astronomers for this distant orb, it will be found not to differ more than by about one teamillionth part.

"The equatorial diameter of the globe, formed by the condensation of this ring, would have been 35,350 miles nearly: astronomers have given 35,000 as the diameter. Thus the result falls within the limits of probability. A globe, of the size of Uranus could have been formed in this

way.

**As Uranus would, for the same reasons as
before given in the case of Neptune, be a hollow
sphere, we find, upon calculation, that his atomic
density would give a thickness of sixty miles for his
crust. This makes his density, or specific gravity,
compared with water, 926 nearly; so that, like his
elder brother Neptune, he is lighter than a solid

sphere of water, but rather heavier than a solid

"Astronomers give for the density of this planet 970, but they doubt their own results. There is indeed a considerable discrepancy between the results given by various authorities. It does not appear that the masses are yet determined in a satisfactory manner. In the case of the planet Mercury, the discrepancy amounts to more than one-half; or, in other words, the mass given by some astronomers is only half that given by others. We make these observations merely to guard our readers against anticipating perfect accordance in our results. If we fall within the limits of probability, that is all we aim at in a popular exposition.
"The planet Uranus should rotate once in 9

"The planet Uranus should rotate once in 9 hours, 43 minutes, and 58 seconds. Astronomers give 9 hours, 30 minutes for the time of his rotation on his axis, but that time is marked doubtful."

Similar approximate results appear for all the other parts of the solar system. But whatever may be thought of the annular theory, it throws no light on the subject of the plurality of worlds. We can suppose, says the author, that the inhabitants of other planets "may be so constituted as to derive their sustenance by the mere inspiration of the kind of air they breathe, and thus, freed from all anxiety on the score of mere bodily entirely at liberty for concentration on mental pursuits." There is no limit to the forms of beings which imagination may conceive, and we may suppose also that intelligent beings may exist without organized frames at all; but all this is beyond the range of inductive research, and we beg Mr. Phillips, and all who yet attempt to reply to Professor Whowell's Essay, to remember the first aphorism of the Novum Organum,— "Homo, nature minister ac interpres tantum facit ac intelligit, quantum de naturæ ordine re vel mente observaverit : nec amplius scit aut potest."

Constance Herbert. By Geraldine Jewsbury. Hurst and Blackett.

The subject illustrated in this novel is one of painful interest, and has of late been taken up by more than one writer of fiction. The heroine of the tale is the victim of hereditary insanity, but the malign influence is kept under restraint by severe discipline, and the design of the author is to show that it is good to exercise restraint and self-denial in such circumstances, and to refrain from risking the perpetuation of mental affliction by marriage. The state in which Constance is presented in the closing scenes of the book explains the principle which Miss Jewsbury seeks to inculcate. She lived in rural retirement, and occupied herself in works of charity and usefulness:—

"Her lot was certainly to all outward appearance calm and prosperous; those who did not know her history might have thought it almost too free from ordinary vexations and troubles to endure; but she had the drawback always exacted by Fate from all human prosperity. She had days of darkness, during which she was like the picture of Faithful, in 'Pilgrim's Progress,' passing in doubt, and dread, and desolate despondency, through the valley of the shadow of death, a narrow footing alone dividing her from the madness that lurked in the shadowy depths on either side. These seasons were not of long duration, but she felt always conscious of the dark presence that might at any moment descend and overshadow her beneath its fearful wings. To compensate, however, for these times of gloom, the intervening periods were so bright and cheerful, that whilst they lasted it was

as though she could never know sorrow more. During the lucid intervals she enjoyed everything intensely; she seemed to enter into the very marrow of life. The knowledge that it was liable to be overshadowed only made her time of brightness more vivid. As she advanced in life these seasons of blackness came less frequently, and endured for a shorter time; but they never entirely ceased to visit her. They served to remind her that she had not made the sacrifice of her life needlessly. She was at one with herself. Once for all she had accepted the conditions of her life, and she enjoyed the peace that never fails to follow an entire obedience to whatever has been revealed to us 'as meet, right, and our bounden duty.' She looked calmly back, and could recognise that when she imagined at the time she had been making an immense sacrifice, she had, in fact, been only making a great escape; and very thankful she was that she had not been allowed to marry such an entirely selfish man.

"But when she renounced him, she renounced what she candidly believed to be all the happiness that could ever be offered to her. She loved him with all the energy of her nature, and she renounced him in obedience to a sense of a higher obligation than personal happiness. She had done so without hesitation, and without any weak endeavour to reconcile self-indulgence with self-denial. That sacrifice of self, once made, was effectual for ever. Never, through the whole course of her after-life, did any storm of human passion come near to harass her.

"In early life, with an entire and perfect heart, she had renounced the gratification of an intense affection, and all idea of ever loving or being beloved again; and because that act was perfect—not made with a treacherous or divided mind—she had rest in her soul. It is the divided heart that makes the misery and restlessness of life."

In the early parts of the novel we are introduced to various scenes and characters, all of which are skilfully used to further the main plot of the story, where Constance on principle refuses to unite herself to one who is subsequently discovered to have been unworthy of her attachment. The escape thus made becomes a compensation and reward for her self-denial, and aids in reconciling her to her position. The story is well told, and has the advantage of conveying plain and practical lessons and warnings in circumstances which are painfully frequent in real life.

Russian Life in the Interior; or, the Experiences of a Sportsman. By Ivan Tourghenieff, of Moscow. Edited by James D. Meiklejohn. A. and C. Black.

APART from the political and military affairs which during war attract prominent notice, this account of social and national life in the interior of Russia will be read with interest. Except from the narrative of passing travellers, and of residents in the great cities, not much is known on these subjects by the people of Western Europe. The present work, which was published at Moscow in 1852 under the title of 'Zapitski Okhotnika,' 'Journal of a Sportsman,' was translated last year in Paris, and from the French version this English translation has been made. Of the literary merit of the work we are unable to give an opinion, but the pictures of Russian life have every appearance of being original and truthful. We give part of one of the sketches, entitled "the Odnovoretz (freedman)—great and petty nobility and bourgeoisie in Russia." The chapter gives a good representation of what seems to correspond to the yeoman class of English ideas:

"The word Odnovorets, though signifying freed-

man, denotes the ambiguous class of small proprietors, who in Russia are neither serfs, nor freedmen,
nor military nobles, nor lords of the soil, and who existed before the bourgeoisie were created, or elevation
to the rank of noble became usual. They are a class
very jealous of their rights; and from their secluded
life far from towns, their contempt of luxury and
mutual union, they have acquired the character
of a sect more than of a class. They do not aspire
to the rank of the boiaria or volevodia. To these
classes belong the genuine Russian grandee alone,
whose peculiar title is velmoj. A type of the
grandee has been already depicted in a preceding
chapter.

Figure to yourself a man of high stature, large, without being obese, of about seventy years of age, and with a face whose general contour re-called forcibly the well-known countenance of John Kryloff, with his clear, intelligent look, under the deep shadow of overhanging eyebrows; a man of grave air, of measured speech, of a slow and sedate walk—figure to yourself such a man, and you will have a notion of the external appearance of Ovcianikoff. He was generally dressed in an ample blue frock-coat with long sleeves, buttoned to the chin, and adorned with round brass buttons, which were kept in a state of the highest polish. From the neck of this coat there just peeped out a silk puce-coloured neckerchief. His general aspect was that of a rich merchant. He had very beautiful hands, white and well-preserved. He did not wish to hide them, it seemed to me; for he had a trick, when conversing, of carrying them to the buttons of his coat. Ovcianikoff, by his air of importance and his inactivity, by his sagacity and sloth, by his honesty and usefulness, forcibly recalled to me the old Muscovite Boyards of the era preceding Peter the Great. The ferez would have well become such a head as his; he was, in fact, a rare relic of bygone times. He was respected by all his neighbours, and it was considered a high honour to be acquainted with him. As to the Odnovortzi—his equals legally, they saluted him with a profound obeisance when they met him. They were excessively proud of him, and would

have sworn by him.
"In general, it is not easy, even at the present day, to distinguish an Odnovoretz from a peasant. His style of living is at times inferior to that of the moujik; his calves may not be fed on milk and bran; his horses may be broken-winded; and his harness made of well-ropes. Ovcianikoff was dis-tinguished among the men of this class, although not considered to possess much wealth. He lived with his wife in a cottage, very well arranged and neatly kept; he had few servants, and never called them servants, but work-people. They, in fact, were his field-labourers. He did not give himself out for a noble, or assume the petty lord; he never forgot himself, never sat down on a first invitation, and never failed to rise at the appearance of a visitor, however humble he might be; and he did all with so much dignity, with such a grand air of perfect breeding, that one felt an involuntary inclination to offer more politeness than he received. Ovcianikoff held by ancient usages, not from any superstitious feeling, for he had an independent mind, but from custom. For instance, he did not like spring vehicles, because he thought it effeminate to indulge in their too gentle motion. He went about in a drochka, or a little car lined with leather, and drove with his own hand his fine bay (he kept only bay horses). His coachman, a young fellow as ruddy as a peach, with hair cut short, a grey armiak, a little sheepskin cap, and a leathern girdle, sat respectfully by his side on the leathern cushion. Ovcianikoff invariably indulged in a siesta; took a bath on Saturdays; read nothing siesta; took a bath on Saturdays; read norming but religious books—his silver spectacles gravely resting on his nose; went to bed betimes, and rose early. He wore neither hair nor beard in the Rus-sian fashion—neatness and cleanliness gained by it, and the dignity of his face lost nothing. He received his visitors cordially, but without officiousness, or making any attempt to overwhelm them with dried fruits and salt provisions.

"" Wife,' he would say in a low tone, turning a

little aside from his company, 'bring some refresh-

"He considered it a crime to sell his grain. In 1840, a year of great dearth and high prices, he distributed all his surplus produce among the proprietors round about, and among those peasants whose masters were absent, and whose overseers had exhausted their means of supplying them. In the following year, all those who had been benefited by his liberality paid their debt in kind with the

liveliest gratitude.

"Ovcianikoff's neighbours appealed to his arbi-tration in their differences, and though often very much excited, they were almost always calmed by his voice, and listened to his counsels; and although their hearts might occasionally rebel in secret, their minds were subdued, and always submitted to his Thanks to him, many a long and fierce decision. feud about boundaries has been put an end to; but, after two or three assaults on the part of noble ladies, he proclaimed that, once for all, he refused ever again to act as mediator between persons of the fair sex. He could not endure hurry, impertinence, screams, exuberance of words, or excitement. One day his house took fire, one of his workmen rushed into his room like a maniac, shouting, 'The house is on fire!'

"That is no sufficient cause for such an outcry; come, my good fellow, fetch me my hat and cane. "He was fond of exercising his horses. On

day a young biteouka, which he had taken a fancy for and bought, took him down the slope of a ravine at a quicker rate than he wished. 'So, so! you little fool, you wish to kill yourself, do you?" muttered Ovcianikoff in a good-natured tone, and in a moment master and servant, drochka and foal, were hurled over a precipice. Fortunately at this spot, the bottom of the ravine was thickly laid with beds of the finest sand; the two men escaped with a few sprains and bruises, but the pony had its leg broken. 'Ah! you see,' resumed Ovcianikoff, calmly, as he raised himself with difficulty, and brushed the dirt from his clothes, 'I told you you would do it!

Like husband, like wife. Tatiana Illinichna was a large woman, grave and silent, who, instead of a bonnet, wore in all seasons and at all hours a of a bonnet, were in all seasons and at all hours a brown silk kerchief. Everything in her seemed stiff and chilling, and yet no one had ever had oc-casion to complain of her severity; on the con-trary, the poor pretty generally called her mother and benefactress. Her regular features, her large brown eyes, her lips so fresh, and so finely cut, still showed traces of the no common beauty which

she must have possessed at twenty. It was a pity that such a couple had no children."

In one chapter are given portraits of two lords of the soil: the first, a retired military officer; and the second, an old Russian, who lived on the ground, and in the manner of his ancestors :-

"Mardari Apollonovitch Stegounoff does not in the least resemble Khvalinski. Heaven knows whether he has ever been in service, or could ever have been considered a handsome man. Mardari Apollonovitch is a little old man, quite round, quite bald, double-chinned, with small flabby hands, and a considerable paunch. He is a free liver, and a merry fellow; he lives according to his fancy, and, as people say, loves his ease; in sum-mer, as well as in autumn, he may be always seen in a striped dressing-gown, lined with wadding covered with silk. There is only one thing in common between him and General Khvalinski-

is a bachelor. He possesses five hundred souls.

"Mardari Apollonovitch manages his property in a summary way. Ten years ago, for example, not to be behind the age, he purchased at Moscow a thrashing-machine; he shut it up in a coachhouse, and never thought of it again. At times, gather bluebottles. Mardan Apononcy of his in the good old way, and the architecture of his antercom house is of a similar character. In his antercom

one is at once overwhelmed by the odours of kvass, one is at once overwhelmed by the odours of kvass, tallow candles, and leather boots. One of the corners is ornamented with a pyramid of pipes, and other smoking luxuries. In the dining-room are the portraits of the family, flies, a huge geraniumpot, and a squeaking spinet... in the drawing-room are three divans, three tables, two mirrors, and a clock with an old enamelled dial-plate and hands of carved bronze; the study contains a cabinet full of papers, a screen of a blue ground, adorned with prints cut out of books of the last century—two presses full of worm-eaten volumes, spiders, and thick layers of a blackish dust, and a well-stuffed arm-chair; this room is lighted by a Venetian window, and by four panes of a door window, now closed up, which was originally intended to open upon the garden. In short, nothing is wanting.
"Mardari Apollonovitch keeps in his service a

great number of people, all dressed in the old fashion, in long blue coats with high collars, nashin, in long blue coass was a long trousers of an undecided colour, and barely descending to the ankle, yellow waistcoats, and finally, cravats of a white corded material. These fine fellows say 'father,' instead of 'sir,' to visitors.

M. Stegounoff has a bourmister, or bailiff, chosen from among his peasants, to look after the management of his estate—a man whose beard terminates where his toulup does, at his knees. His domestic economy is entrusted to an old woman, who wears, instead of a cap, a silk handkerchief firmly tied over her head in a theatrical fashion; nothing wrinkled and disagreeable could equal her. In the stables of Mardari Apollonovitch are kept thirty horses of various kinds. The master makes use of a calash hammered rudely up by his own joiners, and adorned by his own house-painters; it certainly weighs a good many tons.

"M. Stegounoff receives his visitors with a loud welcome and warm salutations, and regales them very cordially—too cordially; thanks to the amazing qualities of Russian cookery, he at once deprives ing quantities of russian cookery, he at once deprives his guests of all power of doing anything else for the whole evening but play at preference. He never occupies himself with anything, morning or evening, and has even given up the custom of reading his sonnik. As we can still count in our dear Russia a great number of lords of the soil cut after this pattern, I ought, it seems to me, to anticipate being asked with what object I have sat down to describe a Mardari Apollonovitch."

We do not follow the author into the details of his description and narrative, having quoted enough to show, that in lively style he introduces to the reader thoroughly national scenes and characters, from which some idea may be gathered of Russian life in the interior.

Grace Lee: a Tale. By Julia Kavanagh, Author of 'Nathalie.' Smith, Elder, and

In this tale we find ourselves amidst scenes that seem familiar, and in the presence of personages whom, in spite of disguise of dress and change of name, we easily recognise. The truth is, that Miss Kavanagh is deficient in experience of real life; and there are few writers who can avoid sameness when they draw merely from the little circle of their own imagination. In Grace Lee and John Owen we are frequently reminded of the Cornelius O'Reilly and Daisy Burns of the author's former novel. We remember a book very like the following:-We remember a scene in that

"At length the day wore away; the sun set; they talked of going. Mr. Owen told them to gather as many roses as they pleased; he helped Grace in the task. Her flowers were the freshest and the brightest; her share was the largest. He heaped her lap and her arms until she laughingly said, Enough. They were alone in a silent alley of white roses, where the blue shadows of evening were softly stealing; the whole air was

full of fragrance, but over all predominated the sweet and peculiar perfume of the red damest roses wreathed in the hair of Grace. She sat on low bank; he stood by her.
"'How do you like Eden?' suddenly asked

'Who would not like Eden?'

" 'Would you like to live here?'
" 'Dearly!'

" 'I too should like it,' and he smiled.

"Ay, with her, for surely he cared little for the roses, and what would be the fairest Eden without

Miss Kavanagh likes to dwell on such tender téte-à-tétes. Here is another, though not al fresco this time :-

"She sat turned towards him in a listening and expecting attitude. Men like to speak of themselves to the woman they love. With a pleased smile he yielded to her wish. He told her all; his past failures, his present success, his ambition hopes; he kept back nothing; the best and the worst traits of his character were laid open to this second self.

"And Grace heard him eager and interested. She sat with her elbow on the arm of her chair, her cheek on her hand, her eyes on his face. When he told her of his hopes and triumphs, they lit with pleasure; when he passed too lightly over some points, she questioned him closely; when he ceased she gaily tapped his shoulder, and said, 'Well done, Timon! And now,' she added, 'begin over again.'

"Pleasant was the task of speaking to such a listener. But Mr. Owen did not merely speak; he questioned. Grace answered very freely.

A more amusing scene occurs when Owen goes to have another quiet talk with the lady of his love. It was dusk when he reached the house, and the following unfortunate mistake took place:—

"On the fourth day he could bear no more; his heart, his eyes, his whole being pined for her sight and presence. He ate a hurried dinner; took a cab and drove off; it was dusk when he reached the lonely house and entered the dull parlour. He found her sitting alone by the open window in the dim twilight; her brow rested on her hand: on hearing Phoebe announce his presence, she neither moved nor turned round. He went and sat down

by her; she drew away her chair.
"'And is this your greeting?' he said, impa-tiently. 'When, after days of absence, I see you alone, too, without that eternal Mrs. Lee?'
"Grace did not reply, but he thought he heard

her weeping; then from reproaches he changed to sudden tenderness. He told her what he had told her so often in vain, and pleaded once more with fervent eloquence the cause he never yet had won; his heart, his soul were in it. Grace heard him with unusual patience, and when he concluded, when he entreated for a word, a sign of favour or hope, she quietly put her hand into his. transport of joy, the proud man raised it to his lips and kissed it fervently.

"' How rude you are, Mr. Owen, said Mrs. Gerald, rising; for alas! it was she and not Grace.

"Mr. Owen loved; he loved passionately. He had poured out his heart, his whole heart, at the feet of his idol; he had kissed her hand with even more than a lover's devotion, and it stung him almost beyond the habitual self-control of a proud heart, to find that Mrs. Gerald's ear had listened to his ardent confession, that to her he had humbled his pride; that her hand had received the fond homage intended for her sister. Mrs. Gerald lit the lamp, then turned round laughing."

We have quoted enough to show that the book has scenes quite after the taste of imaginative and susceptible readers of fiction. Of the author's brightness of imagination and warmth of feeling there can be no question, and in the pleasantness of her style many readers will overlook the meagreness of the

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story. We must repeat the remark which was suggested by the perusal of 'Daisy Burns,' that Miss Kavanagh would be one of our best novel writers, if she displayed greater ingenuity of invention, or if, from reading or observation, she could collect more materials for the construction of her tales.

NOTICES.

Historical Account of the Crimea, from the Earliest Ages, and during the Russian Occupation. Com-piled from the best authorities, by W. Burck-hardt Barker, Esq. Trübner and Co. At the present time whatever relates to the Crimea

will be received with interest, and this historical sketch supplies information drawn from sources not readily accessible to general readers. Commencing with an outline of the geography of the Crimea, or the Taurica Chersonesus of the ancients, Mr. Barker traces the history of the country from the remotest period of mythology and legend down to the times when authentic annals of events are re-Separate chapters are devoted to the corded. Separate enapters are devoted to the history of the Greek colonies, the kings of the Bosphorus, the Mithridatic reign, the invasion of the Scythian or Sarmatian nations, of the Goths, and of successive tribes of Huns, the Genoese and Venetian colonies, the Mongol Tartars, and the dynasty of the Tartar khans as suzerains of the Porte. These records occupy the first part of the work. The second narrates the events that have occurred since the annexation of the Crimea by Russia, under Catherine the Second, with notices of the present inhabitants, and of the condition and of the present manufacture, and of the countries of the country. Contrary to the usual affirmation that Russia conquers in order to strengthen and civilize, Mr. Barker proves that the Crimes has decreased in population, in fertility, and in commerce since the Russians took possession of it. Kaffa, Kertch, Bakshi-Serai, Koslof, Stara Crim, in fact all the towns which the khans left in a flourishing condition at the time of their overthrow, rapidly declined; and for these lost centres of commerce Russia gave its new subjects Sebastopol, with its gloomy fortresses, and Simpheropol, with its dismal streets and squares, so wide that it seems an arid desert shut in by masonry. The privileges guaranteed to the people have also been annulled, and, as in Poland, every effort has been made to extinguish the Tartar nationality. The author believes, however, that there is patriotic spirit surviving, and that the country is capable of resuming its independence, if the western nations succeed in expelling the Russian armies. A map and some coloured plates illustrate the volume.

Principles of Agricultural Chemistry; with special reference to the late researches made in England. By Justus von Liebig. Walton and Maberly. PROFESSOR GREGORY of Edinburgh has translated this work, and in some introductory remarks strongly recommends it to the attention of British chemists and agriculturists. It contains a summary of all Liebig's researches and doctrines in agricultural chemistry, with review of objections, and remarks on practical experiments that have been made since the publication of his former works. In fifty simple propositions the whole of the ascertained facts, as to the true relation between chemistry and agriculture, are stated, and of these propositions Dr. Gregory says, that "they are beyond all doubt true, so far as our present knowbeyond all doubt true, so far as our present know-ledge extends, and contain principles, the due ap-preciation and application of which is of the last importance to all who wish to cultivate agriculture on true, that is, on scientific principles." A trea-tise by Liebig, thus described and recommended, needs no further introduction to our readers. Dr. Gregory descrees thanks for the labour he has Gregory deserves thanks for the labour he has bestowed in providing an accurate translation of

The Town Garden; a Manual for the Management of City and Suburban Gardens. By Shirley of City and Suburban Guarden. Hibberd. Groombridge and Sons.

Ar this season of the year, and at any season, this ittle book will afford practical hints to the owners

or cultivators of city or suburban gardens. Mr. Hibberd writes from his own experience, and his book is as free as possible from technical language, by which its usefulness might be limited. Lists of plants, with directions for culture, and a calendar of operations for the different months, are given. It is a very useful little manual of town gardening.

SUMMARY.

In the first series of Letters on the Philosophy of the Human Mind, by Samuel Bailey (Longman and Co.), clear and concise statements are given of the leading facts and opinions on various questions of mental science. The author does not profess to come forward with original or striking views, but he thinks with independence, and criti cises with discrimination and judgment the tenets usually received by metaphysicians. With the review of the theories of perception we have been much pleased. The book is in the form of letters to a friend, explaining and stating the doctrines under consideration, and the style and mode of treatment is therefore well adapted for those who are commencing the study of mental science. Mr. Bailey is imbued with the spirit of the Baconian philosophy, and applies the principles of inductive inquiry to metaphysical studies.

In a novel, Edith Vernon; or, Contrasts of Character, in two volumes (Hope and Co.), the writer does not display great skill in story-making, and the subjects illustrated are somewhat trite, but the delineations of character, and the representations of scenes in the fashionable world, are drawn with a clearness and force indicating that the author wrote from her own observation and feelings, and did not merely make use of the old materials which reappear in the successive novels of each season of the class to which 'Edith Vernon' belongs.

On the important subject of industrial organization, or The Cooperative Principle not opposed to a true Political Economy (J. H. Parker), a clear and sensible little work is written by the Rev. C. Marriott, Vicar of St. Mary's, Oxford, in which the system of associated labour is explained, and remarks made on various recent publications on subjects relative to the intercommunion of labour, capital, and consumption. There is no doubt that the subjects discussed by Mr. Marriott have been neglected or decried in this country, through a mistaken notion of their being connected with the political socialism of foreign nations. But the facts deserve the attention of political philosophers, But the statesmen, and philanthropists, as well as of the industrial classes; and there is reason to expect that, without attempting any violent changes in the organization of society, arrangements may often be carried into effect for adjusting the mutual claims of classes and interests, and for introducing the system of combined labour into departments where it is at present unknown. The difficulties as well as the advantages of the co-operative prin-ciple are plainly stated in the treatise of Mr. Marriott, who may be said to belong to the class of Proceedings of the same to be to be to the case of practical reformers who call themselves Christian Socialists, in whose proceedings Mr. Kingsley is another who has taken an active and useful part. Mr. Marriott, while approving generally of the principles of these writers, advises caution as to We suspect adopting their practical measures. We suspect that even Mr. Marriott's more limited views are incapable of being carried out, as these artificial arrangements of work and employment are not congenial with English habits and usages. At least, the cooperative principle, requiring mutual inspection and interference with individual independence, or personal waywardness, if you will, will only be adopted on a very limited scale in this

country.

Of recent theological and religious publications we name the following, The Christ of History, an argument grounded on the facts of his life on earth, by John Young, M.A. (Longman and Co.) The Glory of the Holy Ghost, by the Rev. Peter McLaren (Johnstone and Hunter), an able treatise or publications of the Holy Ghost, by the Rev. on subjects, some of which were fully discussed by Dr. Owen in his 'Pneumatologia.' Number

Ninety of Tracts for the Times, reprinted, with introduction and notes, by the Rev James Joseph Frew, (Hope and Co.) This tract has acquired a name in the history, not only of polemical theology but of ecclesiastical affairs. The real character and influence of the Oxford Anglican theology are clearly stated in Mr. Frew's introductory remarks. Mr. Newman's own subsequent career is the best practical commentary on the teaching of the tract of which he had to avow himself the author. Voices from the Cross, or the words uttered during the crucifixion, expounded by the Rev. James Grierson of Errol (Johnstone and Hunter). A volume on Romanism in Ceylon, India, and China, by the Rev. Edward J. Robinson (Hope and Co.), has many valuable notices of the history of Roman Catholicism in the East, and of the religious condition and prospects of the natives among whom missionary proselytism has been attempted.

Mr. Robinson reckons Romanism much in the same category as the creeds of Islam, Siva, and Buddha, in regard to its moral or spiritual influence. The author has laboured as a Protestant missionary in Ceylon, and has had opportunity of knowing well the true state of affairs in that central post of Eastern superstition.

In Our Liturgy and its History, a manual for churchmen (Hope and Co.), a concise and con-nected view is given of the leading facts of the history of the Book of Common Prayer. The facts are taken from the works of Palmer, Hooker, Wheatley, Cardwell, Collier, Mosheim, and other authorities.

In a sermon preached before the University of Oxford by Bishop Wilberforce (J. H. Parker), Rome, her New Dogma, and our Duties, the doc-trine of the Immaculate Conception is treated historically, theologically, critically, and with re-

ference to ecclesiastical politics.

Reprinted from 'The Times' is an article by Rear-Admiral Scott, C.B., on Naval Reform (Stanford), a paper which was called forth by the late Admiral Sir George Cockburn's Memorandum on the Administration of the Admiralty. While Admiral Scott's paper confirms the opinion of Sir George Cockburn, that "the present establishment of that Board is the most unsatisfactory and least efficient for its purpose that could have been devised," some useful suggestions for practical reforms are offered.

For amateurs as well as for students, Outlines of Military Fortification, by J. S. Erlam, formerly an officer of engineers (Saunders and Otley), gives information and directions as to surveying, mapping, and engineering work, with explanation of the terms used in fortification. The book is merely a sketch, so far as military students are concerned, but general readers will find it useful, as affording simple and brief information on subjects at present continually referred to in books, newspapers, and conversation. Some notes are added about the siege of Antwerp by the French in 1832, with a

Information of a plain and practical kind is given to emigrants in a little work, The Australian Colonies, Where they are, and How to get to them, by Henry Capper, late editor of the 'Emigrant's Journal (Groombridge and Sons).

As an appendix to his treatise on the 'Causes of Fires in Buildings,' Mr. Wyatt Papworth, architect, has published Notes on Spontaneous Combustion (C. and E. Layton), in which are presented remarkable examples of fires from chemical changes taking place in substances purposely stored or accidentally left in buildings.

LIST OF NEW BOOKS.

An Abiding Priesthood, post 8vo, cloth.
Barclay's (H.) Thoughts on Sabbath Schools, 12mo, 1s. 6d.
Chalmers' Works; Sermons, post 8vo, cloth, 2s. 6d.
Cotton's (D. H.) Rhimes, &c.,8vo, cloth, 9s.
Curiosities of Biography, 12mo, cloth, 2s.
Curiling's (H.) Recoilections of the Mess Table, &c. 7s. 6d.
Cyclopedia of Universal History, post 8vo, cloth, 10s. 6d.
De Porquet's Abrégé de l'Histoire de France, 6th ed., 3s. 6d.
Deane's (J. P.) Law of Blockade, 8vo, cloth, 10s.
Faussett's (Dr. G.) Sacred Chronology, 8vo, cloth, 7s. 6d.
Fraser's Sermons before, the University of Oxford, fcap., 2s.6d.

Gough's Autobiography, 12mo, cloth, 2s. 6d, and Orations, 12mo, Happy (The) Home, 18mo, cloth, new edition, 1s., 6d. Kitto's Bible History of the Holy Land, 3rd edit., 8vo, 6s. Liebig's (J. P.) Elements of Agricultural Confession of the Holy Land, 3rd edit., 8vo, 6s. Happy (The) Home, Brunt, Great, new curson, 18, od.
Kitto's Bible History of the Holy Land, 3rd edit, 8vo, 6s.
Liebig's (J. P.) Elements of Agricultural Chemistry, 3s, 6d.
Mary Beaver; or, the Housemaid's Wedding, 12mo, 1s, 6d.
New Latin Reading Book, 2nd edition, 12mo, cloth, 2s. 6d.
Occult (The) Sciences, Encyclopedia Met., Vol. 31, 6e.
Papers for the Schoolmaster, post 8vo, cloth, Vol. 4, 16s.
Paictorial History of England, improved edition, Vol.4, 16s.
Readings for the Sundays, &c., of the Christian Year, 4s. 6d.
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MR. BELL'S EDITION OF THOMSON'S SEASONS.

To the Editor of the Literary Gazette.

SIR, -In your notice of the Annotated Edition of Thomson's Poems, you make the following observation;—"At page 145, we find this passage:—

"The shining plum, With a fine bluish mist of animals Clouded,"

with a note, telling us 'this line is not in the early editions.' We never before saw this monstrous line in any edition, early or late; and hope Mr. Bell is not the author of it."

I trust you will see the propriety of correcting this statement. The "monstrous line" is by Thomson, is to be found in the edition of 1746, containing the final revisions of the author, and is repeated in every edition of the 'Seasons' subsequently pubin every edition of the Seasons lished. I have the honour to be, &c.

ROBERT BELL.

* * We did not make the remark which has called forth Mr. Bell's letter without sufficient grounds. On reading the line referred to, it struck us as strange, and on turning successively to three dif-ferent editions of the 'Seasons' in our own library, we found it in none of them. These editions are, 1, that of Thomson's friend, Murdoch, with the life and memoir prefixed, and the dedication to George III., printed for A. Millar, in 1762; 2, the carefully collated edition of Thomas Park, printed at the Stanhope Press, by C. Whittingham, in 1805; and, 3, an elegant edition, with Johnson's life prefixed, published at Edinburgh, by Oliver and Boyd, in 1824. So much for Mr. Bell's affirmation that the line is found in every edition of the Seasons' since 1746. We do not now doubt that it exists in the copy from which Mr. Bell has taken his text, but its absence from three editions, published at the intervals of 1762, 1805, and 1824, and which were immediately accessible to us for reference, disproves Mr. Bell's assertion, and justifies our remark.

G. B. GREENOUGH, F.R.S.

INTELLIGENCE has been this week received of the death, from dropsy, at the ripe age of seventy-seven, of the veteran geologist and geographer, George Bellas Greenough. There is not much to philosopher, for though he wrote a great deal on various scientific subjects, geological, geographical, and ethnological, and has left behind him a large and comparative disregard of worldly renown, made him extremely careless of publication. No mehim extremely careless of publication. min extremely careless of publication. No memoirs from his pen, except presidential addresses, were ever published by the learned societies, and his only printed book is a small volume which appeared in 1819, entitled 'A Critical Examination of the First Principles of Geology,' which it is almost needless to say has become antiquated. Mr. Greenough's fame chiefly rests on his skill in the construction of three important geological maps; and this memory will be respected to the end of time from the circumstance of his being the father and prin-cipal founder of the London Geological Society.

About half a century ago, a warm interest sprung up among a few zealous individuals for the sciences of mineralogy and mining. Several collections of minerals, extremely precious in rarity and value,

were formed, the choicest of which were those of the Right Honourable C. C. Greville, now in the British Museum; of Sir John St. Aubyn, Bart., now in the museum of Devonport; of Sir Abraham Hume, now in the museum at Cambridge; and of Mr. Greenough, a portion of which he pre-sented to the Museum of Practical Geology, but the greater part to the museum of Queen's College, Corl

These gentlemen, together with Dr. Woollaston, Dr. Babington, Mr. Arthur Aikin, Mr. William Phillips, Mr. Leonard Horner, Dr. Roget, and others, proposed to form a society for the cultivation of mineralogical and geological science in a more special manner than that in which it was entertained at the Royal Society, and in 1807 was founded the Geological Society of London, with Mr. Greenough as its President. Of the gallant band which constituted the first council of the Society, twenty-one in number, Mr. Leonard Horner and Dr. Roget, both, we rejoice to say, in full possession of their scientific powers and activity of mind, are the only two who survive. The meetings of the Geological Society were first held in the private house of Dr. Babington; then in the Temple; afterwards in Bedford-row; and it was not until 1826 that the Society was incorporated by Royal Charter.

Mr. Greenough was educated at Peter House College, Cambridge, and studied subsequently at the University of Göttingen, and being a man of considerable wealth, he purchased in early life the honour of sitting in Parliament for that long obsolete type of rotten boroughs, Gatton, the famed com-panion of Old Sarum. The pursuit of science was, nowever, much more congenial to his taste than that of politics, and nearly the whole of his long and useful life has been devoted to the working out of his views in geology. The fruits of these appear chiefly in the construction of three important physical maps. The first, entitled 'A Geological Map of England and Wales,' size seven feet long by nearly six feet wide, was published in 1819, and in 1839 a second edition of it was engraved. Mr. Greenough had a remarkable eye and feeling for colours, and a principal feature in his maps is the elaborate pains with which the various geological elements are indicated by the different tints. Subsequently, when he had reached the age of threescore years and ten, Mr. Greenough constructed maps of Hindostan, and of all India, the latter entitled 'General Sketch of the Physical Features of British India.'

"Let me now direct your attention," said Sir Roderick Murchison, in his Address, as President of the Geographical Society, in 1853, "to the last year's labour of the veteran geographer and founder of the Geological Society of London, my valued friend Mr. Greenough. Whenever the day valued friend Mr. Greenough. Whenever the day shall come—(and may it be far off!)—when the person occupying this chair shall be called upon to treat of the labours of this distinguished man, then will there be poured forth an enumeration of his works which will satisfy mankind, that in this generation no individual among us has accumulated greater stores of geographical and geological know-ledge; and that no one has made greater efforts to generalize detached data, and group them together for the benefit of our race. On this occasion it only behoves me to speak of one of his last efforts, only behaves me to speak of one of ms has chore, or that of the illustration of Hindostan, as put forth in maps exhibited before the Royal Asiatic Society. Defining on one of these, each of the ten water basins of the peninsula, and noting all their affluents, and the number of square miles drained by each, he read a valuable memoir to the Asiatic Another work, and that to which I now Society. Another work, and that to which I now particularly advert, is a grand original physical and geological Map of all India, about seven feet long and five and three-quarters feet wide, which he has prepared himself, directing the insertion of every stream and hill, and sedulously consulting every authority for the geological attributes of each district between the plateaux N. of the Himalaya and Capa Comporin. On this Man the spectator district between the plateaux N. of the Himainya and Cape Comorin. On this Map the spectator sees the delineation of coal tracts, the larger portion of which are unquestionably of tertiary age, and

not like the old coal of Europe and America; the range of the diamond deposits; the vast territoria occupied by granitic and eruptive rocks; the deman cation of masses of secondary age, in which the cation of masses of secondary age, in which the cretaceous deposits of the age of our chall play subordinate a part, whilst the nummulitic formation, or oldest tertiary, has so grand a development, particularly in the north; the Silurian and other palæozoic rocks also being only known in the north-western extremity of the Punjaub and in the

Himalaya mountains.

"Such a labour of love as this on the part of such a man, seems to me to call not only for the special acknowledgments of all geographers and geologists, but also for the approbation of the Board of Control and Directors of the East India Company, who would do real service by publishing this great map, and thus render the name of Greenough as well known in our Eastern Empire

Greenough as well known in our Eastern Empire as it is in Europe."

This map, exhibited and explained last year in the Geological Section at the meeting of the British Association at Liverpool by the venerable author himself, has since been published; and Mr. Greenough was on his way to Constantinope with the Livery and the property of the Livery and the control of the control o the view of making researches in the East for some further scientific work, when he was obliged, by the decline of his health, to remain at Naples. A great portion of the material of Mr. Greenough's map of India was collected for him by Colonel Sykes and by officers of the East India Company, stationed in the Presidencies, to whom detailed forms of inquiry were sent out to be filled up; and the Company considered the Map of so much loss importance as to purchase sixty copies, on its pullication, to be circulated at the different stations.

Although Mr. Greenough belonged to the old Wernerian school of geology, he was an habitual doubter of theories, and as a sincere lover of true, he became fully impressed in time with the light of the new philosophy introduced into the science by the researches of Hutton, Lyell, Murchisa, Owen, Sedgwick, and other latter-day geologist. Though his geological opinions were grounded Though his geological opinions were grounds mainly upon mineralogical views, he was amon the very first to form a collection of fossils; and his opposition, even to Cambrian and Siluria doctrines, gave way as the light of their sublimatruth gradually broke upon him. Mr. Greenough's truth gradually broke upon him. Mr. Greenough; mind was of an essentially practical tendency, as he was extremely reluctant to believe anything has was not capable of being proved. Hence, for a long time he was considered a sort of 'drag' on the progress of geological science; but his generous mind saw and acknowledged by degrees the state of the progressian and the second section. errors that were now step by step passing awar.
Mr. Greenough frequently participated in the billiant contentions of his contemporaries at Somerst House, and he was ever welcomed at the Society's meetings as its patriarch and founder. A st scription of three hundred guineas was form among the members some years since for a bust in marble, by Sir Richard Westmacott, in honour of him as their first President, and it may be seen

in the meeting-room. in the meeting-room.

Mr. Greenough was a Fellow, and twice Vietersident, of the Royal Society, having ben elected as long back as 1807; and he was also a Fellow of the Linnsean, Astronomical, Geographical, Ethnological, and, we believe, one or two othe Societies. Of the study of ethnology he was especially fond, and has left some important manscripts on the subject. Possessed of ample wealth and of vigorous activity of mind and body. In and of vigorous activity of mind and body, is gave encouragement to his favourite sciences, both geve encouragement to his lavourite sciences, because greatly to arrange the Geographical Society map, and contributed a donation of large amount to wards the publication of their library catalogs. For two years he was their President. He gave lectures even so late as last year and the year before to the Asiatic Society; and in the earlier period his life, after the custom of Sir Joseph Banks, he kept almost open house, giving weekly seriat times, both at his residence in Parliament street and at Grove House, Regent's-park. In Greenough travelled a good deal in his geologic

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Vicebeen lso a aphiother empenanuealth p, he both napa, t toexcursions over England with Dr. Buckland and others, and he occasionally visited the Continent. On the day on which peace was proclaimed in 1814, a pleasant geological party was formed of Mr. Greenough, Dr. Woollaston, and Mr. Blake, with the intention more particularly of visiting the establishment of the Paris Ecole des Mines. They resolved to start the following morning, and were among the first to enter France on that

With the men who have contributed by their energy and genius to the foundation of a science so marvellous in its development as that of geology, (and another vigorous spirit has been called away even at the moment of our writing this hasty sketch,) we cannot part without a feeling of the deepest admiration and regret. Yet when, as in the instances of Mr. G. B. Greenough and Sir Henry de la Beche, the labours of such men have been continued with undiminished zeal through a long course of valuable experience to the last breath of their useful lives, it should not be unmingled with a sense of gratitude to the Divine giver of those lives that they have been so long happily spared to us.

MR. ROEBUCK'S COMMITTEE OF INQUIRY.

While the people of England are waiting for the report of the Parliamentary Committee on the causes of the "horrible and heart-rending scenes" of the Crimean camp during the past winter, it will be well to call to mind the result of the inquiry into the melancholy Walcheren expedition. There is every reason to fear that the lessons of that inquiry will be thrown away, just as the warnings to be derived from the expedition itself gave no security against a recurrence of equal mismanagement after an interval of forty-five years. Whatever advances have been made in the intelligence and political influence of the nation since that time, the same lethargy and misconduct mark the whole conduct of the official business of the Government. Looking back at the expressions of public feeling as to the Walcheren affair, it is truly humiliating to find that matters are in our own day as hopelessly bad as they were then, in so far as concerns the rectification of abuses and the punishment of the guilty. The following sentences from an article written by Francis Jeffrey, in the 'Edinburgh Review,' in 1810, might have been written for the present moment:—

"The Parliament of England is now occupied with the investigation of the most inglorious and deplorable undertaking that ever disgraced the councils of the country; and the hearts of the whole nation are watching eagerly for their decision.

"It has always appeared to us that the great practical vice of our Government, was the want of a real responsibility in ministers, and the impossibility of inflicting any punishment, even where they had been guilty of the grossest mismanagement. After lavishing thousands of lives and millions of money,—after sacrificing the character and the interests of the country abroad, and irretrievably tainting its constitution at home, the exploded statesman is permitted to retire, loaded with wealth, and hung round with honours, and to wait unquestioned in a private station, till some intrigue lifts him again into office. Now, this systematic lenity—this expected and never-failing impunity—has had a most permicious effect both upon the people and upon the government; and we are now suffering, and are likely to suffer, incalculable evils in consequence.

quence.

"The administration of public affairs will never be either wise, pure, or consistent, till corrupt and incapable persons are frighted from the office by the certainty of the severe investigation and the unrelenting punishment of their blunders—and till it have ceased to be possible for a court favourite to make shipwreck of the lives and the characters of the noblest of his countrymen, and then retire from effice in the unchallenged enjoyment of

honours, favours, and emoluments. Those who have exposed and discredited such an administration, and by that exposure have at last overthrown it, are bound to follow up their victory with vengeance, and to execute justice on the criminal whom they have denounced and convicted. An eternal and systematic remission of punishment—a regular amnesty upon surrender—leads naturally to suspicions of weakness or insincerity, or both; nor can those who mean well give a better pledge of their being in earnest in condemning the faults of others than by establishing a precedent by which they themselves may be punished, if they ever come to resemble what they have censured. When the country is bleeding in every vein, from the wounds inflicted by convicted folly and incapacity, it cannot be satisfied with the honourable dismissal of those by whose most guilty presumption it has suffered; nor can it have any security against the repetition of similar offences, while those who have brought the former to light appear to be shy of inflicting the yengance they have threatened.

of inflicting the vengeance they have threatened."

It is generally felt that the inquiries of the committee have too much been confined to points upon which an accumulation of evidence can throw no additional light. The wretched state of throw no additional light, The wrecelest state of the camp and of the hospitals, the insufficient clothing of the troops, the bad tools of the engineers, the irregularity and scarcity of supplies, and other dark facts as to the state of the expediknown, but the committee shrink from inquiring who is to blame for these calamities. Who sent who is to blame for these calamities. the bad tents or tools? who did not send the clothing, and medicines, and stores, for which many millions of money have been paid? The jobbery, favouritism, and incompetency of the comfortable officials at home are likely to be passed over, while vengeance is threatened against two or three unsystems of routine in the public service. The blundering and misconduct of the really guilty parties will escape detection, except Mr. Roebuck and his committee vary a little the direction of their inquiries. The suggestion of the Rev Sydney G. and his committee vary a little the direction of their inquiries. The suggestion of the Rev. Sydney G. Osborne, as to handing over the inquiry to the police, is not without significance. Whether the stores charged in the public accounts, and for want of which so many of our poor fellows perished, were ever actually despatched to the East, has not yet been asked by the committee. One obvious improvement in several to all Convencent. improvement in regard to all Government conimprovement in regard to all Government contracts] for the army would be, that the contractors should undertake to deliver the goods to the place of their destination, the charge including the whole cost of transport. In the case of the wooden huts, for instance, had the contractor been required to superintend their erection in the Crimea, he would have sent proper workmen and found means of transit at his own risk, as is successfully and profitably done in all works of private cessfully and profitably done in all works of private enterprise, and as has since been done effectually at Balaklava by the contractors for the railway. The same ought to have been done with the medicines, clothing, and all stores sent out from this country. Had the payment depended on the safe and speedy delivery of the articles, ample prorision would have been made for their transport; whereas now all care on the part of the contractor whereas now an care on the part of the contractor ceases as soon as his goods are handed over to incompetent and careless officials and clerks in London. If the stores ever reach their destination, it is at a cost tenfold the sum which the country would have had to pay had the transport been included in the contract. Till this and other haves at the contract the store of the contract. abuses at home are altered, contractors and jobbers will continue to grow rich by the public misfor-tunes, our soldiers will suffer needless privations and hardships, and the mass of the people will be oppressed with burdensome taxation. We might add more, were it not that our interference with political questions is limited to the duty of being Sebastopol inquiry will lead to more practical results than that of Walcheren.

TOPICS OF THE WEEK.

YESTERDAY morning while drawing up the obituary memoir of Mr. Greenough, information was brought to us that another eminent geologist, Sir Henry De la Beche, has just expired from an attack of paralysis. He was at the Museum of Practical Geology for several hours on Wednesday, and this announcement of his sudden decease will doubtless cause much regretful surprise, though he has been rather infirm for some time past. The loss of the Director of the Geological Survey, and of the Government School of Mines, will very much affect the success of that important scientific institution if there be any favouritism or jobbery in the appointment of a successor; but much of the work has been done with great ability and vigour for some little time past by Professor Ramsay, and we trust that no difficulty will be thrown in the way of our having the right man in the right place. Of Sir Henry De la Beche's brilliant scientific career we shall hope to glean some particulars for our next number.

our next number. A correspondent sends us the following touching history of Mrs. Nicholls, formerly Miss Bronté, the author of 'Jane Eyre,' whose decease was announced in our last:—"Mr. Bronté is the incumbent of Haworth, and the father of the 'three sisters;' two had already died, when Mr. Nicholls, his curate, wished to marry the last sole hope. To this Mr. Bronté objected, as it might deprive him of his only child; and though they were much attached, the connexion was so far broken that Mr. Nicholls was to leave. Then the vicar of Bradford interposed, by offering to secure to Mr. Nicholls the incumbency of Haworth after Mr. Bronté's death. This obviated all objections, and last summer a new study was built to the parsonage, and the lovers were married, remaining under the father's roof. But, alas! in three more the father and husband committed their loved one to the grave! Is it not a sad reality in which the romance ends? May God comfort the two mourners!"

"In your review of M'Cullagh's 'Life of Sheil,' last week," writes a correspondent, "from which an anecdote of the latter is given, as rescuing the elder Henry Grattan from the violence of a Dublin mob, we believe the biographer has made a mistake. The person who really interfered on that occasion was, we understand, the present Commissioner Phillips, of the Insolvent Court. He had, with some other friends, followed the insulted old patriot into the house in which he was obliged to take refuge. One of the sons of Mr. Grattan, from a balcony of the house, attempted to appease the violence without by references to the services of his father, but in vain; he would not be listened to. Mr. Phillips, then highly popular in the Irish metropolis, was induced to make the attempt through Lord Charlemont, and succeeded in quieting the storm and inducing numbers to disperse, yet several remained evidently bent on mischief. Grattan was with difficulty persuaded not to go forth and face the enemy; but his courage found restraint in the prudence of his friends. Ultimately he escaped by a back way. It was afterwards said that a party laid wait for him for several hours at one of the bridges across the Liffey, intending, if they could not maul, to throw him into the river. Such, too often, is the fate of popularity! The particulars of the outrage appeared at the time in the Dublin 'Evening Post.'"

An article in 'The Times' this week claims for Mr. Smith the honour of being "the originator of the idea of the screw propeller," inviting "the most complete, and the most public discussion of his claim." If Mr. Smith was the first who carried into effect this invention and forced it into general use, he deserves some public recognition of services which have proved so important to the national power and wealth. But it is right to remember that James Watt at a very early period originated the idea of the screw instead of paddle wheels, a sketch of his plan being given in the recently published 'Life and Correspondence of Watt,' by Muirhead.

('L. G.' Jan. 27, ante, p. 56.) The notice occurs in a letter of Watt, dated Sept. 30, 1770. This does not detract from the merit of the subsequent invention of Mr. Smith, as Watt does not seem to have carried out his idea, but of his having origi-

nated it there can be no question.

The usual Easter festivities and ceremonies connected with Christ's Hospital have been celebrated this year with unusual splendour, the new Governor, the Duke of Cambridge, presiding at Guildhall, and being entertained at the Mansion House by the civic authorities. On Monday the dinner was given, and on Tuesday, after the Spital sermon was preached in Christ's Church, Newgate, the bluecoat boys, about 850 in number, went to Guildhall, of the origin and history of the Spital sermon, a full account will be found in Mr. Timbs's 'Curiosities of London.' The sermon on Tuesday was osities of London.' The sermon on Tuesday was preached by the Rev. Mr. Moon, the Lord Mayor's chaplain. In 1799, this sermon was preached by the learned Dr. Parr, and is said to have occupied three hours in the delivery. If this is true, must have read all the notes appended to the sermon as published. It was in reviewing this publication in the first number of the 'Edinpublication in the first number of the 'Edin-burgh Review,' that the wit of Sydney Smith first broke out in public, when he compared the body of Parr's sermon to the head of his wig, and the profuse and learned notes to the boundless convexity of the frizz behind.

Among the curious objects dispersed at the Bernal sale is a large crystal, on which is engraved scenes in the history of Susannah. It is mounted in copper gilt, the work of the fifteenth century. Round the central compartment is the inscription LOTHARIVS REX FRANC FIERI FECIT. From the account published by Martene and Durrand in 1727, it would appear that this crystal was then belonging to the abbey of Vasor, on the Meuse, The art is of the same character as the illuminations in the MSS. of the period, but much finer in style. It is remarkable that the French antiquaries suffered such a singular and unique object to escape them. It was knocked down to the British Museum for 2671., a price in the estimation of competent judges much below its real value. It is said to have been purchased at Brussels for ten francs, and subsequently sold to Mr. Bernal for as many pounds. We learn that Mr. Franks, who exhibited casts of this crystal at a recent meeting of the Society of Antiquaries, is preparing an account of it to be read before that body. There was not an object in the Bernal collection of higher archæo-

logical interest.

The sale of Lord Rutherfurd's library at Mr. Nisbet's auction rooms, Edinburgh, has been brought to a conclusion, the aggregate produce of 2578 lots amounting to about 7000%. In classical literature the library was remarkably complete, as well as in legal and professional books. Lord Rutherfurd's refined taste was displayed in the externals of his library, as well as in its well-selected volumes, almost every one of which was elegantly bound and in fine condition. The bulk of the library is dispersed among private collec-

tions in Scotland.

The valuable library of the late Archibald M'Lellan, Esq., of Glasgow, is to be sold by auction, by Messrs. Brown and Macindoe of that city, next week, commencing on the 19th inst. The collection is peculiarly rich in books on the fine arts, and includes all the best treatises on painting, sculpture, drawing, and engraving, and many illustrated works of English and foreign scenery. Of books on architecture, civil and eccle-siastical, there is a good collection, most of Mr. Britton's works, and copies of Mr. M'Lellan's own essay on Glasgow Cathedral, with the plans and elevations of the additions and restorations, being in the list. In miscellaneous literature there is also a fair collection of books.

The Imperial Library of Paris is stated to have received 500 donations of books, manuscripts, medals, antiquities, &c., in the course of the past year. Amongst them were several Russian and Armenian books and manuscripts of considerable

value; some old Greek medals; a number of the coins put into circulation by the Crusaders; and several stones containing inscriptions and mosaics from the ruins of Carthage. The library also exchanged surplus copies of books for other works, with the British Museum, the Royal Asiatic Society, the Smithsonian Institute, the Academies of

Munich, Stuttgardt, Christiana, &c.

We learn from Paris, that on the 6th of this
month, M. Chacornac, of the observatory in that city, discovered a new planet, the right ascension of which was 13h. 40m., and the southern declination 8½°. A few days before, M. Dieu, of the same observatory, discovered to the north of \$\xi\$ in the Eagle, what appeared to be a comet, but it

disappeared afterwards.

Dr. Ratkhe, Senior Professor of the University of Christiana, in Norway, died at the end of last month. He has bequeathed a large library and a very valuable collection of objects of natural his-

tory to the University.

Three of the great works of the late John Martin, the painter, The Last Judgment, The Great Day of His Wrath, and The Plains of Heaven, are at present on exhibition in the City, at the hall, No. 52, Threadneedle-street. bold genius of Martin, and the peculiarities of his style, are strikingly displayed in these pictures, of which engravings are being executed for publication by Messrs. Leggatt, Hayward, and Leggatt,

A view of the Railway at Balaklava has been added to Messrs. Grieve and Tolbein's Diorama of the events of the War, at the Gallery of Illustra-

tion, 14. Regent-street.

A literary movement has commenced in France, which may have very grave consequences if it con-tinues—the provinces have begun to shake off the intellectual domination of Paris to which they have so long been subjected. At Marseilles, a short time since, a new five-act opera was produced, and in the same city a new five act comedy is now in rehearsal. At Lille and Lyons some original volumes of poetry and prose have been brought out. Bordeaux, on its part, is preparing to print original books, and to produce original plays. Heretofore, the rule in the French provinces has been not to see any dramatic piece which had not been applauded in Paris, and not to look into any book not printed in Paris. The new movement has already received the name of 'Literary and Dramatic Decentralization,' and if it prospers, it will be very advantageous indeed to scores of authors and dramatists, who are unable to make

themselves known in the capital.

The season of the Royal Italian Opera, at Covent Garden, commenced on Thursday, with Rossini's Il Comte Ory. Mr. Costa on appearing was received with more than usual applause, a gratifying proof of the satisfaction felt on account of his retaining his post, rumours to the contrary having prevailed. The principal performers were also cordially received, especially Madame Bosio and Gardoni, who appeared for the first time at Covent Garden. With the exception of Gardoni in place of Lucchesi as Comte Ory, the cast of the opera was precisely the same as last season, towards the close of which it was produced, a notice of the performance having been given in the 'Literary Gazette' of that time ('L. G.' Aug. 12, 1854, p. 723). We only mention now that Bosio's brilliant and florid style was displayed to greater effect than ever, and that Gardoni was in excellent voice, and made a favourable débât in his new engagement. Among the passages which were most strikingly given, we may notice the trio in the second act, admirably given by Madame Bosio, Mdlle. Marai, and Gardoni; the septett towards the close of the first act; the 'Beviam, beviam' chorus, and the chorus without accompaniment at the end of the first act. The stupidity of the greater part of the libretto will prove a drawback to the popularity of the opera, in spite of the charming music of Rossini. Only the professional part of an audience and a few musical enthusiasts will deem this of no moment in the performance of an opera, but we feel sure that for any piece to remain in general and lasting

favour, there must be a little intellectual satisfation, as well as mere acoustic gratification. It is satisfactory to listen to nonsense, even when After the opera the whole company sang the Queen's Anthem, the solo of one of the stanza being thundered out by Herr Formes with great force. Beethoven's Fidelio is selected for Thursday the 19th, when the Queen goes to the opera in state, accompanied by the Emperor and Empress of the French.

The season of the Italian and German Opera, at Drury Lane, commenced last evening, with the

Sonnambula.

The second of Sir Henry Bishop's grand concert, at Exeter Hall, will be given on Monday evening, assistance of the highest professional talent and skill being provided, and a most acceptable selection of

the composer's best works.

The Italian Theatre at Paris has closed its s It has, we hear, not been a successful one for the manager; yet he had a company which comprised such eminent artistes as Mesdames Frezzolini, Bosio, and Borghi-Mamo, Rossi, Lucchesi, and Daucarde. At the Grand Opera in that city, Madame Stoltz has appeared in the part of Fides in the Prophète, which was composed specially for her. In portions of it she was your factorials of the composed specially for her. her. In portions of it she was very fine, but sadly incorrect and negligent. The general execution of incorrect and negrigent. The general execution of the opera was anything but satisfactory. At the Opera Comique, on Wednesday, a new three-act opera by Ambroise Thomas was brought out. In the course of Holy Week, a vast number of cor-certs were given in Paris, but the only one that need be mentioned was one at the Italian Theatre, in which the Redemption of Alary was given.

The different theatres this week have presented the usual variety of Easter entertainments, but there is really nothing worthy of being specially noticed either for originality or merit. Haymarket, Mr. Planche's extravaganza, The New Haymarket Spring Meeting, 1855, has some points of sparkling wit, as a piece of any length from this writer could scarcely fail to have; but with the exception of the opening scenes, referring to old London sights and London abuses, the plan of the extravaganza is heavy, and the whole affair is tolerable only through the personal exertions of the performers, and the scenic effects. At the Adelphi, the adaptation of the old nursery legend of Mother Goose, mixed up with chapters of Cinderella, Little Red Riding Hood, and other tales, is a far more pleasing and entertaining performance. At the Princess's, an adaptation by Mr. Morton of the libretto of M. Adam's opera is produced, under the name of *The Mulcteer of Toledo*. The story is somewhat complicated and not very interesting but the acting is good, and the mise en scène impos-ing and tasteful. At the Olympic, The Yellow Dwarf, Mr. Planché's Christmas piece, retains is place, and crowds are still entertained by Mr. Robprice, and crowds are sun entertained by Mr. nor son's grotesque appearance and intensely comic performance. At the Strand there is a Shakspearian burlesque, King Queer and his Daughters Three. At Sadler's Wells, the Lyceum company, "barred out" of their over house. of their own house, have found a temporary refuge, and are amusing the north Londoners with some of the light pieces of the Lyceum stock which can be given without the aid of Mr. Charles Mathews. The pieces in the transpontine theatres were of the kind which are always popular in that region, the entertainments at the Surrey being increased by the engagement of Mr. Wright.

PROCEEDINGS OF SOCIETIES.

ROYAL INSTITUTION.—Feb. 23rd.—The Rev. John Barlow, M.A., F.R.S., Vice-President and Secretary, in the chair. John Dickinson, Esq., F.R.S., F.G.S., M.R.I., 'On providing an Additional Supply of Pure Water for London,' The lecturer commenced by describing the two different modes of supply of water to towns, namely, the one by forcing it, by means of pumping engines, directly into the pipes of supply called mains; the other by the delivery of it from a lake or reservoir on a high level, also through pipes; in which latter differen pipes. River (The ri derivin a large further spot, w gate H plied New I of a na voir, a out th expres opport than in lakes,

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case the water, by the mere force of gravity, will flow over large districts, and by the comparative difference of level will rise to the tops of houses below it, to which it is conveyed by the service pipes. He observed, that the supply by the New River Company comprehended both those modes. The river flowed into a reservoir at Islington, called the New River Head, and, of course, mains deriving their supply from that, conveyed water to a large district of London situated below it; but, furthermore, there were pumping engines at that spot, which forced up water to reservoirs at Highgate Hill and other places, from which it was supplied to districts situated above the level of the New River Head. He observed, that in speaking of a natural supply of water collected into a reser voir, at a high level, and delivered therefrom without the aid of pumping engines, the technical expression of engineers now is, "a supply by gravitation;" and this is the mode adopted wherever opportunity offers; which is more rare in England than in Scotland, because in the latter country, lakes, mountains producing rivers with sharp declivities, and tracts of moor land, adapted for gathering grounds, are to be found in the neigh-bourhood of their principal towns and cities, and the inhabitants have availed themselves of these local advantages for obtaining the supply needed; and though, in some instances, they have had to convey water from considerable distances, and to form engineering works of great magnitude for receiving the water, yet they have to boast not only of the amplitude and excellence of their supply, but of its moderate cost. Mr. Thom, who gave evidence before the Commission, states, "At Campbeltown, a family of five individuals will be lied for about 1s. 4d. per annum; the cost at Ayr, for the same quantity, is 2s. 2d.; at Paisley it is 2s. 9d.; in Greenock, I think, it is about 2s. 6d. I allow in this case 5 per cent. on the capital employed; the expense for wear and tear, charge for superintendence, and the like, being always included in my estimate." He further states, "All those are high-pressure services, and reaching the tops of houses, have all the advantages of being enabled to put out fire, and supply the eisterns at the tops of houses." The lecturer remarked, that the supply by gravitation had the advantage of being constant instead of being intermittent; and at the same time the works connected with it were more simple, and, by reason of saving the expense of steam engines, force-pipes, and coals, far less costly. He then proceeded to explain the mode by which it might be introduced, to a far greater extent than at present, for the supply of London, Westminster, and the western suburbs of the metropolis. The description of this was illustrated by maps, on a large scale, and a model, by means of which, and particularly by the model, the superfices of the country, and its geological features were exemplified, so as to render the description of the plan perfectly comprehensible. He explained that the model exhibited the valley of the river Lea, from whence the New River is derived, and that of the Colne, from which he proposed to derive another New River. He pointed out the unifor-mity of character of the rivers Lea and Colne; that each of them was constituted by the confluence of several small perennial streams issuing from the deeper valleys of the chalk, which had their source ards the summit or escarpment of that stratum, and were fed and augmented throughout every yard of their course by springs. He explained, that in consequence of the absorbency of the surface, a considerable portion of the rainfall gradually descending through the crevices and fissures of the chalk, constitutes by its accumulation in those hills a vast natural reservoir, which, owing to the necessary difficulty of percolation towards the springs, tains a constant supply to the rivers through out the year, though varying exceedingly in quantity according to the amount and period of the rainfall; the summer rains being proved, according to a system of experiment devised by Dr. Dalton, to contribute almost nothing to the supply of this subtangence recognize in consequence. of this subterranean reservoir, in consequence of the great evaporation and the prodigious de-

mands of vegetation during that period. The lecturer pointed out that either of these rivers, the Lea or the Colne, might be regarded as the outflow or yield of a large space of gathering ground, not less than 200 square miles; and the Colne had this advantage over the Lea, namely, Coine had this advantage over the Lea, namely, that the valley through which it flowed to the Thames was in perpendicular elevation much superior to that of the Lea. Mr. Dickinson then pointed out that it was only by very long and very definite experience in the actual measurement of the river, that anyone could be convinced of the enormous fluctuation in the quantity of its flow, not only according to the season of the year, but between one year and another; so that the late Mr. Telford, owing to the want of that experience, and to the neglect of seeking information from the best sources, had been led in his survey in 1834 to assume, that he could calculate upon a supply of thirty-two cubic feet per second from one, and that not the most considerable of the branches of the river Colne above referred to, which, at the pre-sent time, owing to the drought of last summer and autumn, does not yield much above one-third of that quantity. The lecturer gave it as his opinion, founded on more than forty years' experience, that by taking advantage of the whole supply of the valley, comprehending the four streams which are united at Rickmansworth, viz.:—the Colne, the Ver (which was the choice of Mr. Telford), the Gade, and the Chess, which latter stream flows past Latimer and Chenies, a supply of forty-two cubit feet per second could always be relied upon for London, besides leaving a surplus for the lower part of the valley, which would be augmented by the stream from Missenden, which joins the Colne below Harefield; and accordingly, he proposed to abstract 42 cubic feet per second at that point, for conveyance to London by a new aqueduct, constructed on more judicious principles than the New River of the Lea valley. A plan of this work, on a very large scale, was exhibited, and the lecturer explained various novel contrivances by which he proposed to give space for the deposit of every thing of greater specific gravity than water, and to intercept every thing that would float, and to clear away scum, and guard the channel from leaves and vegetable refuse, also to aerate the water; and vegetable retuse, also to aerate the water; and finally, to deliver twenty-three millions of gallons per diem—in other words, twenty-three gallons a a piece daily, for a million of individuals—into a reservoir at Kilburn, so filtered, and at the same time so fresh, as to compare with the most perfect spring water, which reservoir, or head of distribu-tion, would be 120 feet perpendicular above the datum line of the Ordnance Survey, made at the suggestion of the Board of Health. The Ordnance map of London, the fruit of that survey, on the scale of 12 inches to the mile, with the elevation of every part of the metropolis stated upon it, was exhibited, which embraced also the reservoir; and, by means of a line of uniform level traced upon the map, it was made apparent how very large a portion of London could be supplied by gravitation, at high-service level, over and above the whole of Westminster, Belgravia, Knights-bridge, Brompton, Chelsea, Fulham, and Kenbridge, Brompton, Cheisea, Fulnam, and Ken-sington. He stated, that having had a great deal of experience in works of this nature, he was satisfied that the cost of delivering this quantity of water at Kilburn, purified and filtered, would, according to Mr. Thom's mode of estimate, but presuming money to be obtainable at 4 per cent. per annum, not exceed three farthings per thousand gallons, including the very heavy item of compensation to millowners; and that the whole cost of distribution would not exceed threepence per thousand gallons, which, as proved in the evidence of Mr. Hawksley, was the rate of charge for the water supply at Nottingham. Some of the water taken out of the river Colne, at Harefield, vas produced at the meeting and much approved. was produced at the healing and much approved. With reference to the liability of the Colne being rendered turbid at the time of floods, (for at other times it is perfectly clear,) he quoted the following evidence of Mr. Hawksley on the subject of running water purifying itself,—"I can give a very extraor-

dinary instance of that, as occurring at Nottingham. At Nottingham the supply is taken from the river Trent. Upon the tributaries of the river Trent are situated the towns of Leicester, Loughborough, Derby, Belton, and the whole of the Potteries. The water leaves those towns frequently in an exceedingly black noisome state, but the water of the river Trent is, nevertheless, exceedingly beautiful and pellucid; in fact, at Trent Bridge, near Nottingham, it is as clear as crystal; organic matter is not discoverable in it, except in the degree in which it is discoverable in all river water." The lecturer concluded by stating that he had taken particular notice of the amount of water expended in his own house and stables, (in Upper Brook Street,) and it led him to the conviction that the whole of the large and populous district, before referred to, southward of, and including Piccadilly, might be supplied by this application of the gravitation system at one-fourth the scale of the present rate of charge; but with the proviso, that water for the streets and for public purposes, should be paid for out of the parish rates as at present.

GEOLOGICAL. - March 7th. - W. J. Hamilton,

Esq., President, in the chair. The following commutions were read: 1. On the Geology of the Gold-Fields of Ballarat, Eureka Creek, and Creswick Creek, Victoria, by Mr. H. Rosales. Communicated by W. W. Smyth, Esq., F.G.S. The general charac-ter presented by these goldfields is an undulating surface, with steeper slopes where slaty rocks pro-trude, and gentler in the lowlands, where the soil is composed chiefly of quartzose débris, and is covered by the monotonous vegetation of the 'stringy-bark gum-tree,' This district is surrounded by grassy plateaux of lava or basalt, on which the white gumtrees are predominant. The slaty rocks or schists, which form the bed-rock of this district, are traversed by quartz veins or lodes, generally in the direction of their dip, which constitute the matrix of the gold. The superficial deposits lying unconformably on the slates sometimes include two gold-bearing beds. The lower one consists of large quartz boulders, which always indicate the run of the auriferous ground; and these are covered by gravels, sands, and clays, without any determinate arrangement. The alluvial deposits are divisible into,—A. Older than the basalt; previous to the eruption of the lava and the distribution of boulders of basalt. B. Newer than the basalt; 1, contemporaneous with the distribution of the basaltic boulders; and, 2, beds covering these boulders, but older than the 2, beta covering these bounders, but once that the formation of the existing valleys. The direction of the transport of the boulders is determinable in some localities. For the most part these ancient drift-deposits have no relation to the present watercourses; and, from the subsequent accumulation of alluvium, the present relief of the country does not correspond with that older surface. 2. 'On the Geology of part of the Peel River District, Australia, by M. F. Odernheimer. Communicated by Sir R. Murchison, F.G.S. In this paper the author minutely describes the characters of the granitic, trappean, and slaty rocks. In the last both the slates and the limestone have undergone silicification and brecciation. The proximity of serpentine has especially silicified the metamorphic serpentine has especially silicined the metamorphic rocks. The author considers it highly probable that the igneous rocks were intruded whilst the sedimentary strata were still being formed, and that they have been mutually affected in consequence. Where the metamorphism has been less in degree the traces of fossils (Lepidodendron, &c.) have been met with in the softer rock. In the area of the greatest development of igneous and meta-morphic rocks on both sides the Peel River, and morphic rocks on both sides the red raver, and higher up the dividing range, is the locality of the auriferous quartz-veins of this district. These veins are either parallel or transverse to the strike of the rocks. They seldom exceed a foot in thickness, and vary in extent; they occur for the most part in dioritic rock and in dioritic and siliceous part in dioritac rock and in district breccia, but appear to be richest in true diorite. The gold is only seen in out-cropping and decomnosing portions of the veins. Where the quartz

becomes more compact, lower down in the vein, the gold is not visible, but iron-pyrites occur. From his observations on the subject the author is led to believe that the gold is derived from the continual decomposition of the auriferous iron-pyrites; and that, though drift-gold is chiefly to be referred to that, though drift-gold is chiefly to be referred to these auriferous quartz veins, yet the decomposing surfaces of rocks containing iron-pyrites, as the hornblende rock, syenite, diorite, porphyry, and breccia, of the Peel River district, are also to be regarded as a source of gold. 3. On the Occurrence of Obsidian Bombs in the Auriferous Alluvium of Australia,' by the Rev. Mr. Clarke, F.G.S. The author referred to the volcanic bomb of green obsidian, brought from the plain between the rivers Darling and Murray, and described by Mr. Darwin; and then entered upon the description of one from the Turon River, found at a depth of thirty feet, and of three others from the Uralla or Rocky River These are small roundish subgold-washings. stances, about half-an-inch in diameter, translucent, and of a green or blackish tint. From their general appearance they are termed 'button-stones' by the diggers. The author considers it probable that the Uralla 'bombs' originated from volcanic outbursts. in connexion with the igneous action of which the altered rocks in the dividing range at the head of the river, and the basaltic plateau above the diggings, bear ample evidence, although craters are not known to exist; and that the 'bombs' of the other districts referred to were also derived from local subaerial volcanoes.

4. 'On the Occurrence of Fossil Bones in the Auriferous Alluvium of Australia,' by the Rev. W. B. Clarke, F.G.S. Fossil bones of extinct mammalia have been found throughout a range of eleven degrees of latitude, and at heights varying from one hundred feet below to sixteen hundred feet and upwards above the sea-level. The author refers to the analogous occur-rence of bones in gold-drift in the Ural and in California; and in the latter country, as in Australia, this drift is frequently overspread with the pro ducts of volcanic outbursts, or with the debris of volcanic rocks. It would appear that a great part of the now dry land of these countries was under the water when these osseous remains were buried: and probably the destruction of these mammalia at last was connected with the final outbreak of igneous forces, which changed the horizon of considerable tracts, and introduced a state of things incompatible with the existence of these, for the most part, gigantic animals, now extinct. 5. 'Notes on the Geology of New South Wales,' by Rev. W. B. Clarke, F.G.S., in a letter to Sir R. Murchison,

Society Of Arts. — March 14th. — Professor Donaldson in the chair. The paper read was 'On a New Method of Teaching Drawing, involving the Principle of a New System of Architecture,' by Herr Joseph Kumpa, of Dresden. By this proposition, as soon as a student could accomplish the drawing of a line tolerably straight, he was told to copy a square. When this was done, the square was divided into quarters, diagonals were drawn across it, and various mathematical figures were made, rapidly advancing into figures of some complication, curiosity, and beauty. From straight lines the pupils proceeded to arcs and curves, and eventually into some practice in the use and comeventually into some practice in the use and com-bination of the elementary colours. During the time he was carefully practising the drawing of the lines in every position, the mathematical nature of his copies was continually urging him to delineate correctly; his appreciation of angles, power of measurement, and sense of form and beauty, were also at the same time fostered and developed. More or less attention would of course be paid to these elements, according as the ultimate direction these elements, according as the ultimate direction of the pupil's studies was mechanical, architec-tural, or artistic. Indeed, the system was princi-pally intended for the education of those engaged in manufactures, and the arts of design connected with them. After the reading of the paper, the Secretary stated that he had received three com-munications from Mr. R. Redgrave, R.A., Mr. George Wallis, and Mr. D. R. Hay. Mr. R.

Redgrave, R.A., entertained a favourable opinion Redgrave, R.A., entertained a favourable opinion of Herr Kumpa's method, provided it was not used to the exclusion of other means. The method was not, however, new in this country, having been largely practised by many teachers, although not perhaps so systematically as advocated in the paper. Mr. George Wallis illustrated the truth of the proposition by drawings executed chiefly by students of three months' standing in the branch elementary school of the Birmingham School of Art. where the system had been in operation Art, where the system had been in operation twelve months, but his own practice as a teacher had been based upon an analogous principle for fourteen years past. Mr. D. R. Hay (of Edinburgh) thought the method of teaching drawing a ourgn thought the method of teaching drawing a very good one for very young people, but he did not see any principle of a new style of architecture evolved in it. A discussion ensued, in which Mr. Digby Wyatt, Mr. J. D. Harding, Mr. Papworth, Mr. Waterhouse Hawkins, Mr. Henry Twining, Mr. F. S. Carey, Mr. Mogford, Mr. Burchett, Capt. Ibbetson, Mr. Neville Warren, Mr. Tennant, Professor Hofmann, and the chairment took part

ASIATIC. - March 17th .- Professor Wilson, the Director of the Society, in the chair. The Director read a communication from Sir John Bowring, containing some further account of his researches in quest of the Buddhist books known to have been carried from India to China in the early centuries of the Christian era, and translated from Sanscrit into Chinese by Hinan Tsang, and others. According to the notices received from Sir John, none of the originals have as yet been found; but a curious statement has been forwarded to the effect that the original blocks, from which one of the translations of Hinan Tsang were printed, are still preserved in a monastery near Nankin. In addition to the works noticed in the 'Literary Gazette' of the 9th Dec. last, six more have been These have been examined by Mr. Edkins, who gives an account of their various translators. Notices of some original Chinese Buddhist works are added to the paper. Professor Wilson had also received a communication from M. Stanislas Julien respecting these books; and that gentleman states that the geographical work of Hinan Tsang, which has been supposed to be the result of his own observations, is, in reality, the translation of a Sanscrit geographical treatise. Professor Wilson observed, that a work of this nature is a great rarity in Sanscrit literary history. He had never met with more than a mere fragment containing geographical information in Sanscrit. M. Julien proposes to translate this work, but requires aid to enable him to publish it.

LINNEAN.—March 20th.—Thomas Bell, Esq., President, in the chair. Mr. Stevens, F.L.S., exhibited specimens of two species of Euchirus—the one brought from Amboyna by Madame Pfeiffer, the other from India. Mr. Ward, F.L.S., exhibited three autograph letters—one addressed by Sir John Franklin to Mrs. Flinders, one by Capt. Flinders to Mr. Crossley, and the third by Sir Joseph Banks to Capt. Flinders. Mr. Ward likeexhibited autographs of Tournefort, Antoine de Jussieu, Bernard de Jussieu, Antoine Laurent de Jussieu, Bernard de Jussieu, Antoine Laurent de Jussieu, and Adrian de Jussieu. Dr. Daniell, F.L.S., exhibited a specimen of kino from Nyami, Upper Gambia, together with specimens of preserved vegetables, reduced by pressure into very small compass. These preparations are intended for use during long voyages, &c., and large quantities have lately been transmitted to our army in the Crimea. Mr. P. H. Gosse, A.L.S., read a paper 'On Peachea hastata.' a new form of the the Crimea. Mr. P. H. Gosse, A.L.S., read a paper 'On Peachea hastata,' a new form of the Actimiada, remarkable for having a posterior orifice to the intestinal canal, and a singular papillated tubercle on the oviduct. He also proposed a subdivision of the genus Actinia into three genera, named Sagartia, Bunodes, and Actinia, founded mainly on peculiarities in the system of nettling-threads; and glanced at the mutual relations of the genera in the Helianthoida.

ANTIQUARIES .- March 29th .- Admiral Smyth ANTIQUARIES.—March 2200.—Admiral Smyth, V.P., in the chair. The Auditors' report for the year 1854 was read by the Treasurer. Mr. Joseph Clarke, of Saffron Walden, and Mr. John Barnard, were elected Fellows. Mr. Fairholt exhibited a cu-rious casket of Cuir Boulli, from Mr. Roach Smith collection, on which he offered some remarks. Mr. Pycroft contributed a transcript of a letter of Lord Brereton, after the taking of Nantwich by the Roundheads. Mr. Wylie, in a letter to the Secretary, introduced to the notice of the Society draw ings of the actual size of two glass drinking cups found in a Frank cemetery in Normandy, by the Abbé Cochet. The ornamentation of one of thee vessels resembles that on the glass cups found at Cuddesden, Oxfordshire, engraved in Akerman's Remains of Pagan Saxondom,' while the other in form closely resembles a glass of the same period found at Woodensborough, in Kent. Mr. Durant Cooper himself read a 'Further Account of Thomas Norton, and of State Proceedings in the years 1581-2,' including some curious incidental notices of the use of the rack in England. The anniversary meeting was announced for the 23rd, and the Society adjourned to Thursday, the 19th of April.

MEETINGS FOR THE ENSUING WERK.

Monday.—Statistical, 8 p.m.— (A Ten Years' Retrospect of London Banking. By J. W. Gilbart, Ess.

British Architects, 8 p.m. Chemical, 8 p.m.

— British Årchitects, 8 p.m.

— Chemical, 8 p.m.

— Chemical, 8 p.m.

— Civil Engineers, 8 p.m.

— Pathological, 8 p.m.

— Royal Institution, 3 p.m.—(Professor Tyndaller Voltaic Electricity.)

Wednesday.—Society of Arts, 8 p.m.—(Dr. D. B. Rei, Notes on the Revision of Architecture. Win some Account of the Ventilation of St. Georgiv Hall, Liverpool.)

— Geological, 8 p.m.—(1, On the Cassian Bed, between the Keuper and the Lias, in the Varailberg. Extract of a letter from Professor Merian to Sir R. I. Murchison, V.-P.G.S. 1, Fossils from the Keuper at Pandock, near the Malverns. By the Rev. W. S. Symonis, F.G. 3. On a Cretaceous Formation in Natal, South Africa, By Capt, Garden. With a Notice of the Fossils. By W. H. Baily, Esq. Communicate by R. Godwin Austen. Esq. Sec.(S. 4. On the Geology of Natal. Extract of a letter from Dr. Sutherland to Sir R. I. Murchison, V.-P.G.S.)

— R. S. of Literature, 4‡ p.m.

— R. S. of Literature, 4‡ p.m.

— Antiquaries S. p. m.

... S. of Interactic, 49 p.m.

—Royal, 84 p.m.

Antiquaries, 8 p.m.

Royal Institution, 3 p.m.—(Mr. G. Sharf, jm.,

on Christian Art.)

on Christian Art.)

-Royal Institution, 81 p.m.—(T. H. Huxley, Esq., on certain Zoological Arguments commonly address of the Fregressive Development of Animal Life in Time.)

-Asiatic, 2 p.m.

Medical, 8 p.m.

Royal Institution, 3 p.m.—(Dr. Du Bois-Reymond on Electro-Physiology.)

Ancient Gold Coins .- As a gardener in the em ploy of Mr. W. Cotton, St. Ann's, Lewes, was engaged in cutting firewood upon an old choppingblock, a short time ago, he was greatly astonished upon finding some gold coins drop from it. Upon examination he discovered several others in a cre vice, numbering in all forty-nine, being guiness of the reign of Charles II., James II., and William III. The block was formerly a portion of a beam of an old house in St. Ann's, and for several years past had been lying in an open yard; the money appeared to have been secreted by putty, which when the block was struck by the force of the axe was removed. The treasure was subsequently handed over to Mr. Cotton, who deposited it in the hands of the Solicitor of the Treasury as "treasure trove" belonging to the Crown, the rightful owner not being forthcoming. Seven of the coins were pur-chased by the trustees of the British Museum, and the remainder, together with the sum paid for the seven, were, at the request of Mr. Cotton, appropriated to the funds of the Lewes Dispensary. On Monday, the money, amounting in value to 518.92, was handed over to Mr. Kell, the Secretary to the Dispensary, and a vote of thanks was passed to 23rd of tribute

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Mr. Cotton for this handsome donation .- Sussex

Exhibition of Photographs at Amsterdam.—By the courtesy of the editor of 'La Lumière' we are enabled to announce that an Exhibition of Photographs, and of the instruments and materials used in the art, will be opened at Amsterdam on the 23rd of this month, under the immediate patronage 23rd of this month, thuch the Metherlands. The exhibition is promoted by the Society Arti et Amicitie and the Society of International Industry. Eight silver and twenty bronze medals will be distributed among the exhibitors.—Notes and Queries.

COUTARI. By the Hon. and Rev. Sydney Godolfully Sydney Syd

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